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IDA DOCUMENT D-1537

PROCEEDINGS OF THE FOURTH ANNUAL MAJOR RANGE AND  
TEST FACILITY BASE (MRTFB) ENVIRONMENTAL WORKSHOP,  
26-28 APRIL 1994

Charles T. Ackerman, *Project Leader*  
Christine M. Jordan

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July 1994

*Prepared for*  
Office of the Director, Test and Evaluation  
(Test Facilities and Resources)

Approved for public release; distribution unlimited.

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INSTITUTE FOR DEFENSE ANALYSES  
1801 N. Beauregard Street, Alexandria, Virginia 22311-1772

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## **PREFACE**

This document was prepared by the Institute for Defense Analyses (IDA) for the Office of the Director, Test and Evaluation (Test Facilities and Resources) under a task entitled "Resource Analysis for T&E." This document serves as a record of the proceedings of the Fourth Annual Major Range and Test Facility Base (MRTFB) Environmental Workshop, held 26-28 April 1994.



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## **I. INTRODUCTION**

## **I. INTRODUCTION**

The Fourth Annual Major Range and Test Facility Base (MRTFB) Environmental Workshop, held 26-28 April 1994, was sponsored by the Major Range and Test Facility Base Environmental Coordinating Committee (MECC) with the support of the Office of the Under Secretary of Defense (Acquisition and Technology), Director, Test and Evaluation (Test Facilities and Resources). The purpose of the workshop was to encourage and facilitate communication between MRTFB facility representatives, the military Services, and the Office of the Secretary of Defense on environmental issues that affect the test and evaluation community. The memorandum from Bernard C. Perry, Chairman of the MRTBF Environmental Coordinating Committee, that announced the workshop is reproduced on page I-3.

The first morning of the workshop featured presentations by representatives from the Office of the Director, Test and Evaluation, on how the test and environmental communities can work together; the Office of the Secretary of Defense and the military Services on the status of environmental programs. Also included was a presentation and open discussion on the environmental component of the test and evaluation education program being developed under the Defense Acquisition Workforce Improvement initiative. The remainder of the workshop featured a series of panel discussions and working group sessions on pollution prevention, integrating environmental considerations into test programs, conservation, environmental research and development, geographic information systems, National Environmental Policy Act compliance, and public involvement. The workshop agenda is presented on pages I-4 through I-6.

This document was prepared for the participants of the Fourth Annual MRTFB Environmental Workshop as a record of the proceedings during the two and one-half days. This document is divided into nine chapters and two appendices.

Chapter II contains presentations on how the test and environmental communities can better work together. Chapter III contains the chairman of the MECC's presentation on the accomplishments of the MECC during the last year. Chapter IV contains presentations on the Department of Defense (DoD) and military Service environmental programs. Chapter V contains presentations on the environmental component of test and evaluation education courses and a brief summary of the discussion of the recommendation made by

the workshop participants. Chapters VI, VII, and VIII contain a brief summary of the issues discussed during the pollution prevention, test programs, and conservation panel discussions as well as copies of the presentations made by the panelists. Section IX contains brief summaries of the issues discussed during the MECC subcommittee panels and working group sessions. Appendix A contains the names, telephone numbers, and addresses of the workshop participants. Appendix B summarizes the responses to a questionnaire that was distributed during the workshop.

The materials in this document were reproduced from the best copies available as of the date of publication. They do not necessarily include the various attachments cited.



Aberdeen Proving Ground · White Sands Missile Range  
Naval Air Warfare Center - Aircraft Division · Naval Air Warfare Center - Weapons Division  
Air Force Development Test Center · Air Force Flight Test Center

Major Range and Test Facility Base Environmental Coordinating Committee

MEMORANDUM FOR DISTRIBUTION

SUBJECT: 1994 Major Range and Test Facility Base (MRTFB) Environmental Workshop

The MRTFB Environmental Coordinating Committee (MECC) is sponsoring the Fourth Annual MRTFB Environmental Workshop to be held at the Institute for Defense Analyses on April 26 - 28, 1994. The theme is "*Environmental Office Support to the Test Mission, The Role of Sound Environmental Stewardship*".

This year's meeting will focus on improving the way environmental and test personnel work together to accomplish the mission. The workshop will include sessions on integrating environmental considerations into test programs, pollution prevention and conservation requirements and strategies, public involvement and environmental research and development.

The workshop is designed to facilitate communication among test and environmental personnel at the MRTFB facilities, the Services and the Office of the Secretary of Defense. Representatives from each of these organizations are encouraged to attend. In addition, each MRTFB facility is encouraged to prepare a poster paper for display at the workshop. The attached pamphlet includes the information on the call for poster papers, the preliminary agenda, the registration form and information on accommodations. Please complete and forward a registration form for each attendee to Ms. Christine Jordan at the Institute for Defense Analyses, 1801 North Beauregard Street, Alexandria, Virginia 22311, FAX (703) 845-2211 no later than April 8, 1994.

If you have any questions or would like special topics addressed during the workshop, please contact me at DSN 298-1086 or commercial (410)278-1086.

*Bernard C. Perry*

Bernard C. Perry  
Chairman  
MRTFB Environmental  
Coordinating Committee

Attachment

Chairman - Mr. Bernard C. Perry - US Army TECOM - Aberdeen Proving Ground, MD 21005-5055 - (410) 278-1086

Vice-Chairman - Mr. Robert Wood - AFPTC/EM - 70 North Wolfe Avenue - Edwards AFB, CA 93524-5000 - (805) 277-1407

**Workshop Agenda,  
26 April 1994 (Tuesday)**

- 0730-0820 Registration**
- 0820-0830 Opening Remarks—Mr. Bernard Perry, MECC Chairman**
- 0830-0915 Working Together—The Test and Environmental Communities**  
Mr. John Bolino, DT&E (Test Facilities and Resources) and  
Dr. John Wiles, DT&E (Test Technology and Environmental Protection)
- 0915 - 0945 MECC Accomplishments—Mr. Bernard Perry, MECC Chairman**
- 0945 - 1025 Army Environmental Program Overview—Mr. Phil Huber, Office of the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health)**
- 1025-1040 Break**
- 1040-1120 Navy Environmental Program Overview—Ms. Elsie Munsell, Deputy Assistant Secretary of the Navy (Environment and Safety)**
- 1120-1200 Air Force Environmental Program Overview—Col. Cullen A. Hollister, P.E., Office of the Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health)**
- 1200-1300 Lunch and Poster Paper Displays**
- 1300-1330 The DoD Environmental Security Program—Ms. Sherri Wasserman-Goodman, Deputy Under Secretary of Defense (Environmental Security)**
- 1330-1430 Defense Acquisition Workforce Improvement—T&E Education, the Environmental Component—Mr. Irv Boyles, DT&E (TFR) and Mr. Bob Bennett, NWAC**
- 1430-1730 Pollution Prevention Panel Discussion, Facilitated by Mr. Tom Metz, Naval Air Warfare Center**  
  
Mr. Dick Kebler, DUSD(ES)/PP—Implementation of Executive Order 12856 "Federal Compliance With Right-to-Know Laws and Pollution Prevention Requirements"  
Mr. James O'Bryon, DT&E (Land and Maritime Programs)—Status report on the Halon Alternatives Steering Committee  
Ms. N. Teresa Hoagland, EPA—Successful Strategies/Information Clearing House
- 1730-1900 Examples of Successful Strategies: Maj. Richard Travis, TECOM**

**Workshop Agenda,  
27 April 1994 (Wednesday)**

**0800-0830 Coffee and Poster Paper Display**

**0830-1200 Test Programs—Integrating Environmental Considerations**

Facilitated by Capt. Oscar Overton, Air Force Operational Test and Evaluation Command (20 minutes)

Mr. Tom Maday, Naval Air Warfare Center - Aircraft Division (Patuxent River)—Seminar on the Test Planning Process (1 hour)

Mr. Mahlon (Sonny) White, DUSD(ES)/CM—Overview of Environmental Requirements (30 minutes)

Mr. Ken Amster, Naval Air Warfare Center—Weapons Division (China Lake)—Examples of the Navy's Implementation of 5000.2 (30 minutes)

Success By Working Together:

Mr. Bob Wood and Mr. Sean McMurrow—AFFTC (20 minutes)

Ms. Peggy Hoffer—W/SMR (20 minutes)

**1200-1300 Lunch and Poster Paper Display**

**1300-1700 Conservation—Managing Our Natural and Cultural Resources**

Facilitated by Mr. Ray Wagner, Army Test and Evaluation Management Agency (15 minutes)

Mr. Peter Boice, DUSD(ES)/CI—What We Should Be Doing, Legacy Program (30 minutes)

Overview of Successful Programs:

Mr. Lance VanderZyle—YPG (20 minutes)

Mr. Ron Dow and Mr. John O'Gara - NAWC-WD (20 minutes)

Mr. Rick McWhite—AFDTC (20 minutes)

Mr. Bob Lacey, Army Construction Engineering Research Laboratory—Technologies to Assist in Conservation Activities (45 minutes)



**Workshop Agenda,  
28 April 1994 (Thursday)**

**0930-1000 Research and Development Subcommittee Meeting**

Mr. Al Lopez, NAWC-WD (China Lake)—SERDP Update, requirements coordination  
Mr. Lance VanderZyle, Yuma Proving Ground—Environmental Simulation Model Project  
Dr. Regina Dugan, Institute for Defense Analyses—MRTFB Research and Development Survey

**concurrent**

**GIS Implementation Panel**

**0830** Overview - Ms. Jill Cicierski, MECC GIS Subcommittee Chairperson  
**0835** Introduction to Tri- Service CADD/GIS Technology Center - Mr. Harold Smith  
**0850** Introduction to Facilities CAD-2—Mr. Deke Smith, Naval Facilities Engineering Command  
**0900** DoD GIS Implementation Findings—Maj. Brian Cullis, USAF  
**0915** Patuxent River GIS Efforts/Demonstration—Ms. Jill Cicierski  
**0930** Edwards AFB GIS Overview/Demonstration—Mr. Sean McMorrow  
**0945** Discussion

**1000-1015 Break**

**1015-1130 MECC NEPA Subcommittee Meeting**

**1015** Opening Remarks  
**1025** Subcommittee Goals  
**1040** Plans and Tasking for Subcommittee

**concurrent**

**Public Involvement Panel**

**1015** Overview of Environmental Public Involvement—Ms. Debbie Smith, MECC Public Involvement Subcommittee Chairperson  
**1030** Update on the "Keystone Report"—Ms. Marilyn Null, EPA  
**1045** DoD Public Participation Guidance and Initiatives—Col. Gary Thomas, ODUSD(ES)/CL  
**1100** Restoration Advisory Boards—Ms. Patricia Ferrebee, Office of the Chief of Naval Operations  
**1120** Questions and Answers

**1130-1200 Overview of Workshop Output**

**1300-1600 Public Involvement Subcommittee**

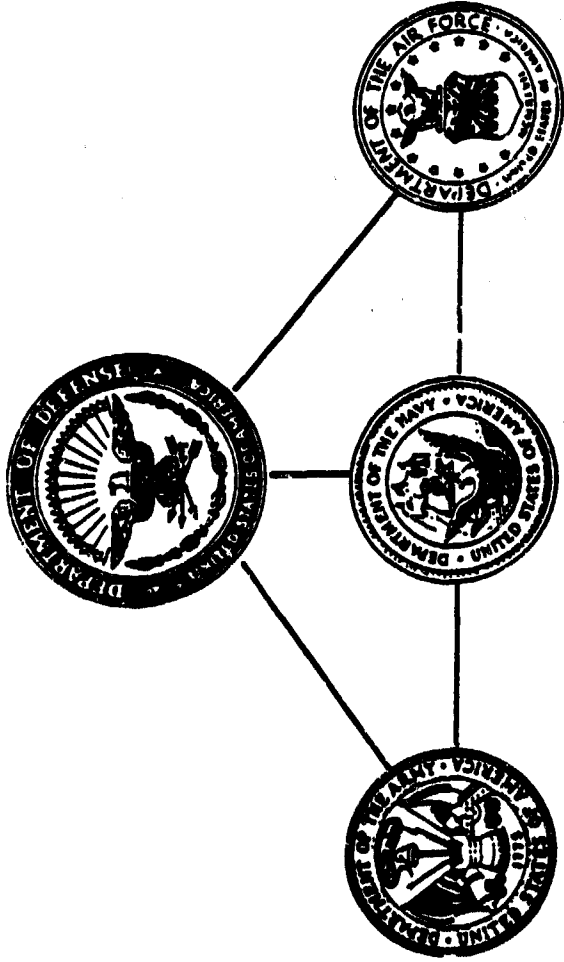
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**GIS Subcommittee Meeting**

**II. WORKING TOGETHER—THE TEST AND  
ENVIRONMENTAL COMMUNITIES**

**TEST AND EVALUATION FACILITIES AND  
RESOURCES PERSPECTIVE**

**Mr. John V. Bolino, DT&E(TFR)**



**4th Annual MRFTB ENVIRONMENTAL WORKSHOP**  
**Alexandria, Virginia**

**April 26, 1994**

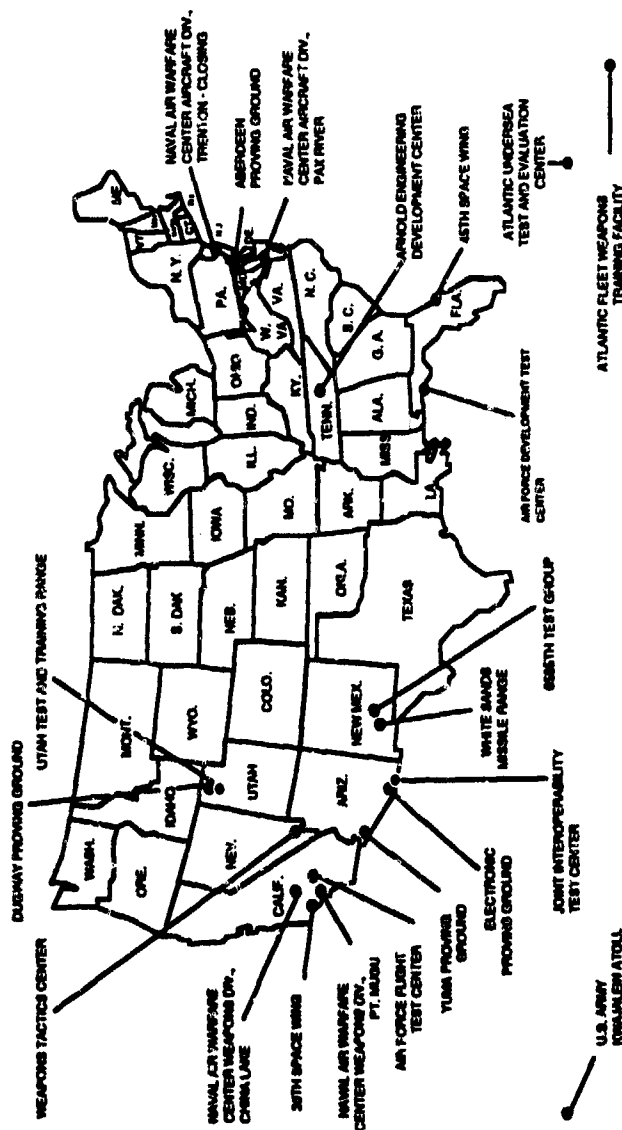
**Mr. John V. Bolino**

**Deputy Director, Test and Evaluation  
(Test Facilities and Resources)  
Office of the Under Secretary of Defense  
(Acquisition)**



# DEPARTMENT OF DEFENSE MAJOR RANGE AND TEST FACILITY BASE

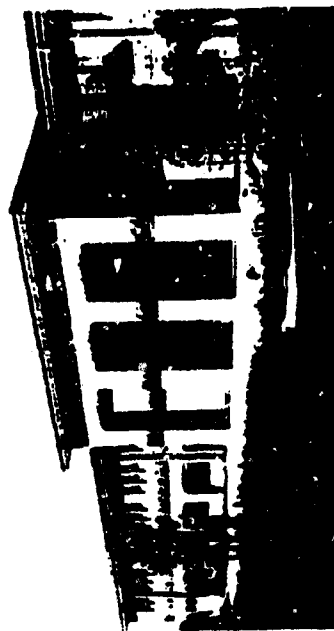
## MAJOR RANGE AND TEST FACILITY BASE



LAND SPACE 21,000 square miles  
WATER SURFACE 243,000 square miles  
AIR SPACE 221,000 square miles



## MAJOR RANGE AND TEST FACILITY BASE



CAPITAL INVESTMENT \$34 BILLION





## THE TEST AND EVALUATION MISSION



### Mission

The MRTFB is a national asset, sized, operated and maintained to provide test and evaluation support for weapons systems acquisition programs.

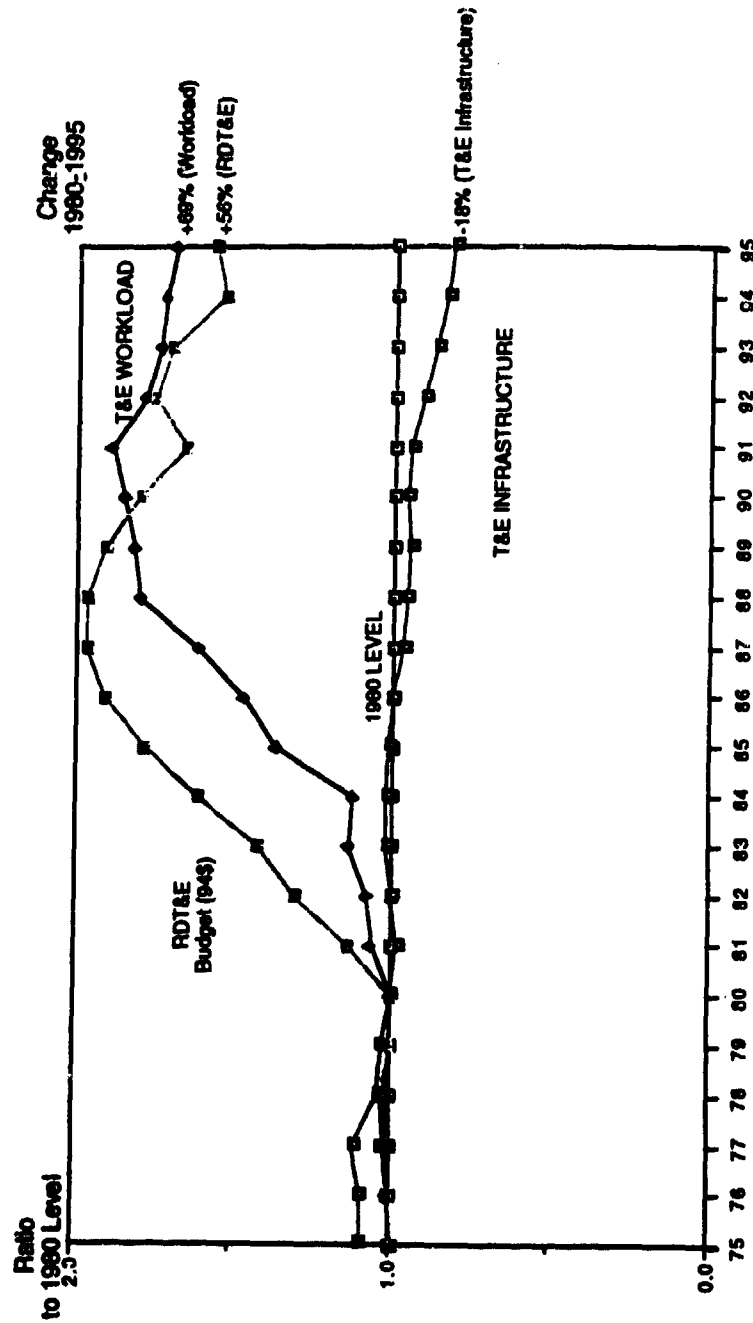
### Environmental Regulations

National Environmental Policy Act (NEPA)  
Comprehensive Environmental, Restoration,  
Compensation and Liability Act (CERCLA)  
Resource Conservation and Recovery Act (RCRA)  
Clean Air Act (CAA)  
Clean Water Act (CWA)  
Pollution Prevention Act  
Emergency Planning and Community Right to Know Act





## DoD Trends in T&E And RDT&E Budgets







## **CENTRAL TEST AND EVALUATION INVESTMENT PROGRAM ENVIRONMENTAL THRUST**

---

### **GOALS**

- Develop and demonstrate test technologies that will enable the MRTFB to meet environmental obligations in a more cost effective and efficient manner while minimizing any negative impact on the test mission.
- Leverage SERDP projects that could benefit the MRTFB.
- Ensure that the test and evaluation community has the capability to provide demonstration, test and evaluation support for environmental technology R&D programs.



**CENTRAL AND EVALUATION INVESTMENT PROGRAM  
ENVIRONMENTAL THRUST**

---

**FY94 Projects**

- Environmental Model and Simulation Project  
Yuma Proving Ground -- \$200K
- Geographic Information System Network  
Naval Air Warfare Center--Aircraft Division  
(Patuxent River) -- \$150K



**CENTRAL TEST AND EVALUATION INVESTMENT PROGRAM  
"ENVIRONMENTAL THRUST"**

---

**PROGRAM MANAGER:**

**Mr. R. W. Pace  
DT&E (TFR)  
703-697-4818**

**SCHEDULE: CALL FOR FY95 PROPOSALS**

**JUNE 1994**



## CONCLUSION

---

- Need to protect our ability to carryout the test mission in the future
- Need to plan ahead and do things smarter (cheaper/faster/better)
- The MECC must be value added (is it?)

**RISK MANAGEMENT AND ENVIRONMENTAL PROTECTION**

**Dr. John Wiles, DT&E(TT&EP)**

DDTE/T&EP



# RISK MANAGEMENT ENVIRONMENTAL PROTECTION

DR. JOHN WILES  
DEPUTY DIRECTOR, TEST AND EVALUATION  
TECHNOLOGY AND ENVIRONMENTAL PROTECTION  
(DDTE/T&EP)

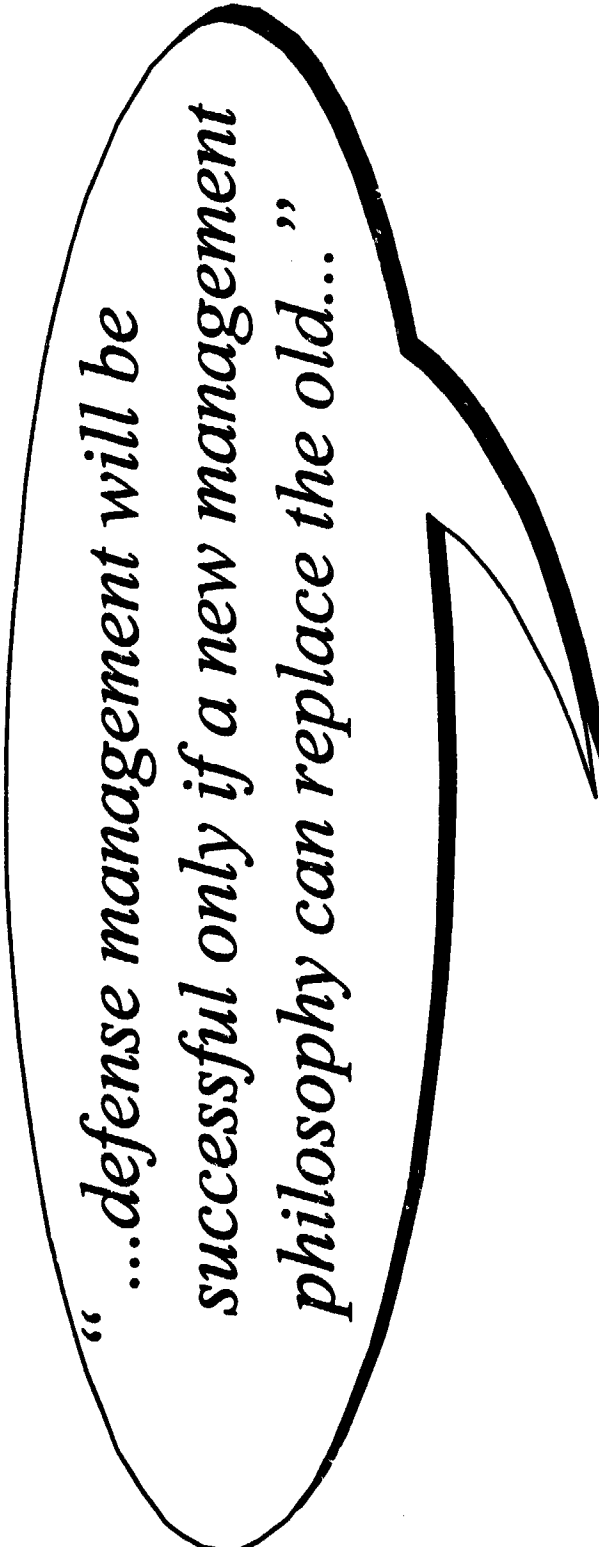
# *Overview*

- *Acquisition Challenge*
- *DDTE Response*
  - *Parallel Functions*
  - *Life Cycle Tasks*
  - *Protection - The Balance*
  - *Environmental Protection Focus*
  - *Risk Management Approach*
- *Summary*

## *Acquisition Challenge*

DOD Directive 5000.1, DOD Instruction 5000.2, and DOD 5000.2-M integrate a total systems' engineering approach to acquisition reform - first proposed in 1986 "A Formula for Action: A Report to the President on Defense Acquisition" - reiterated in the Packard Commission Report.





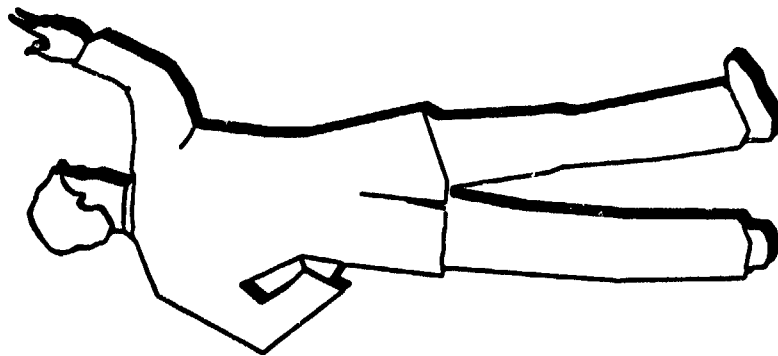
*“ ...defense management will be  
successful only if a new management  
philosophy can replace the old...”*

*William J. Perry, 1986  
(SECDEF 1994)*

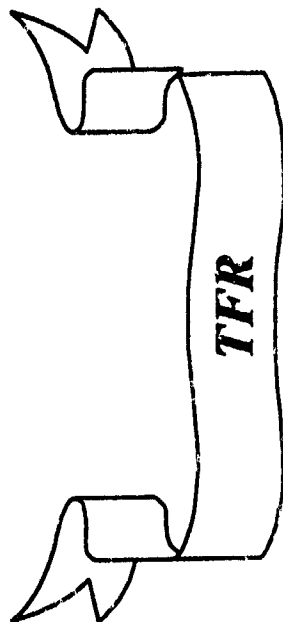
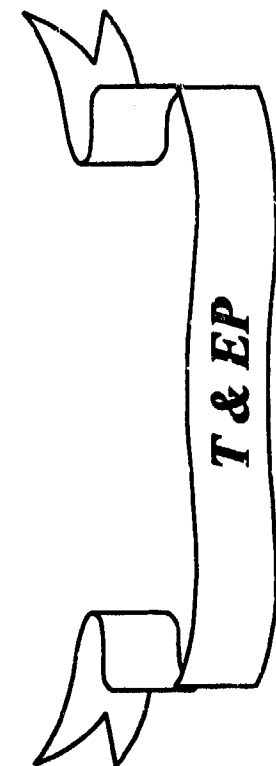
# *DDTE Response*

DDTE/T&EP reviews the Test and Evaluation Master Plan to:

- insure the integration of a suite of technology and environmental protection risk management assessments;
- balance technology transfer and conversion missions with technology protection goals.



# *Functions Are Parallel*



## **Program Focus**

**Oversight of  
Program Managers**

**Life Cycle Cost**

**Prevention and  
Compliance**

## **Facility Focus**

**Oversight of Range  
Managers**

**Event Cost**

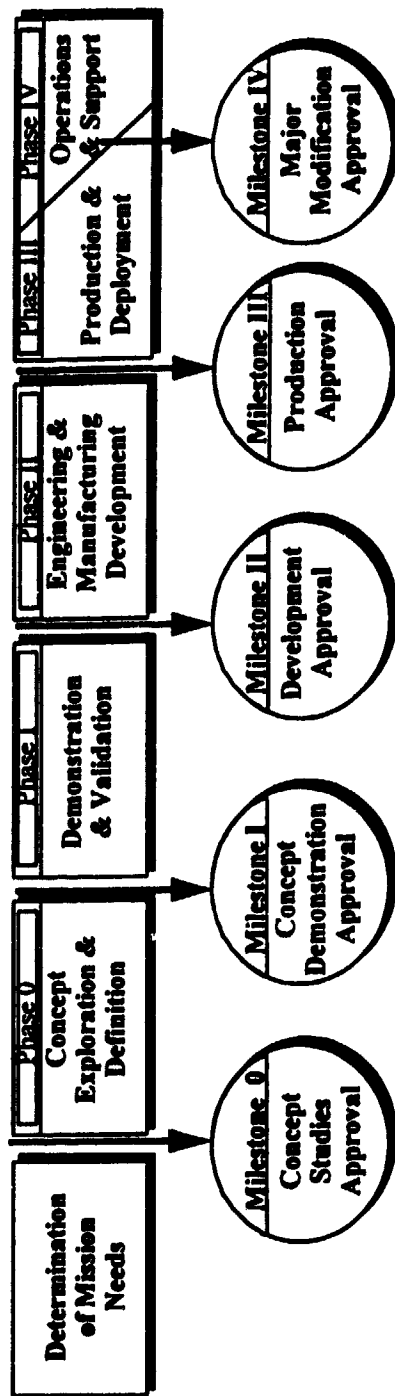
**Clean-up and  
Compliance**

## *Life Cycle Tasks*

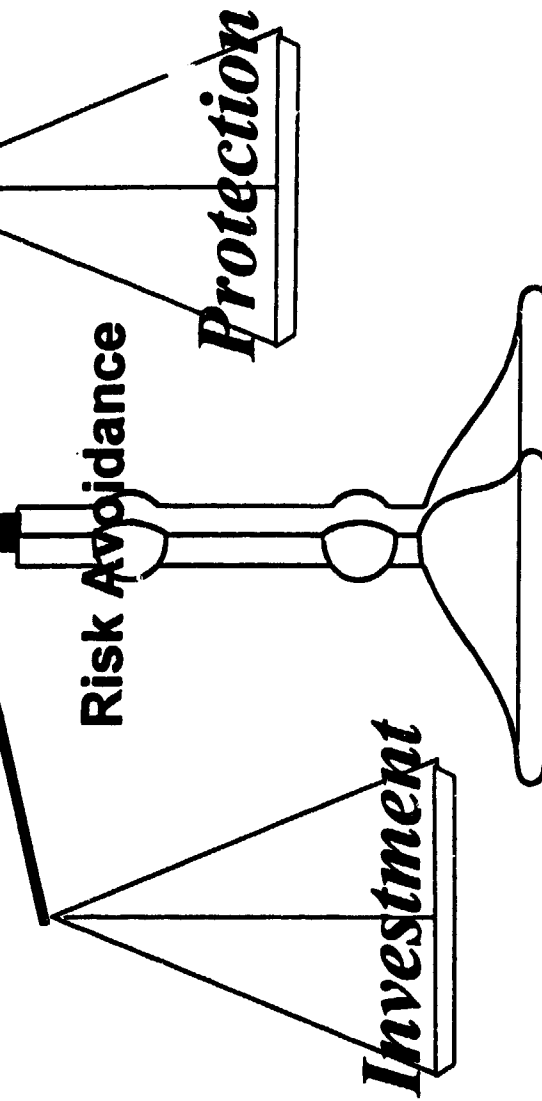
*“ Program risks and risk management plans shall be explicitly assessed at each milestone point prior to granting approval to proceed into the next acquisition phase.”*

*DODD 5000.1, Part 1, paragraph C.2*

DDTE/T&EP



*Risk avoidance* made an automatic assumption that *all* environmental risks were inherently fatal to the natural order and must be protected against by ~~extreme measures~~.



It is being rejected and replaced by

*risk management*,

in which costs

of natural losses

and regulatory

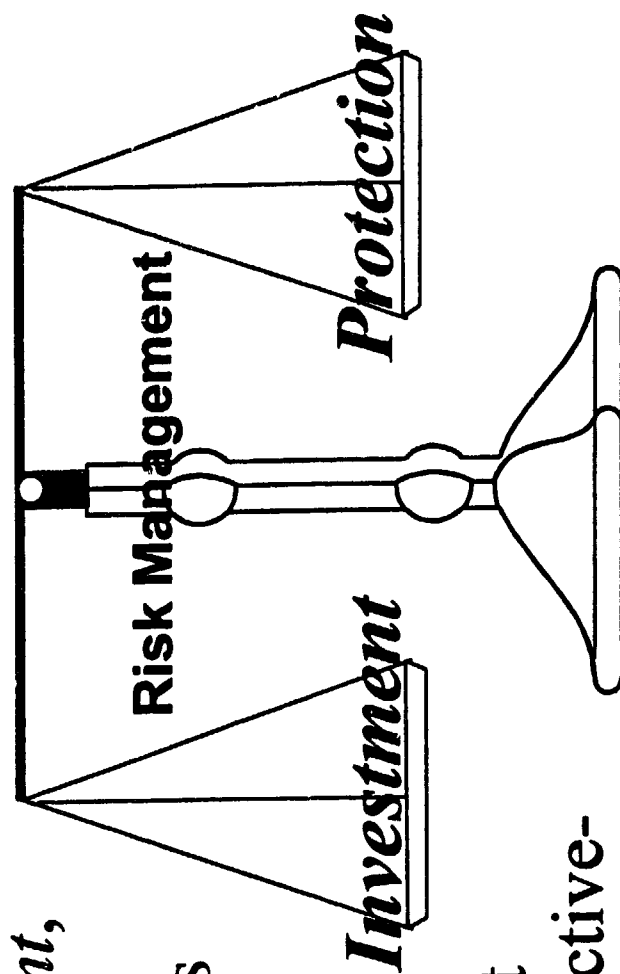
violations,

resulting in

negative impact

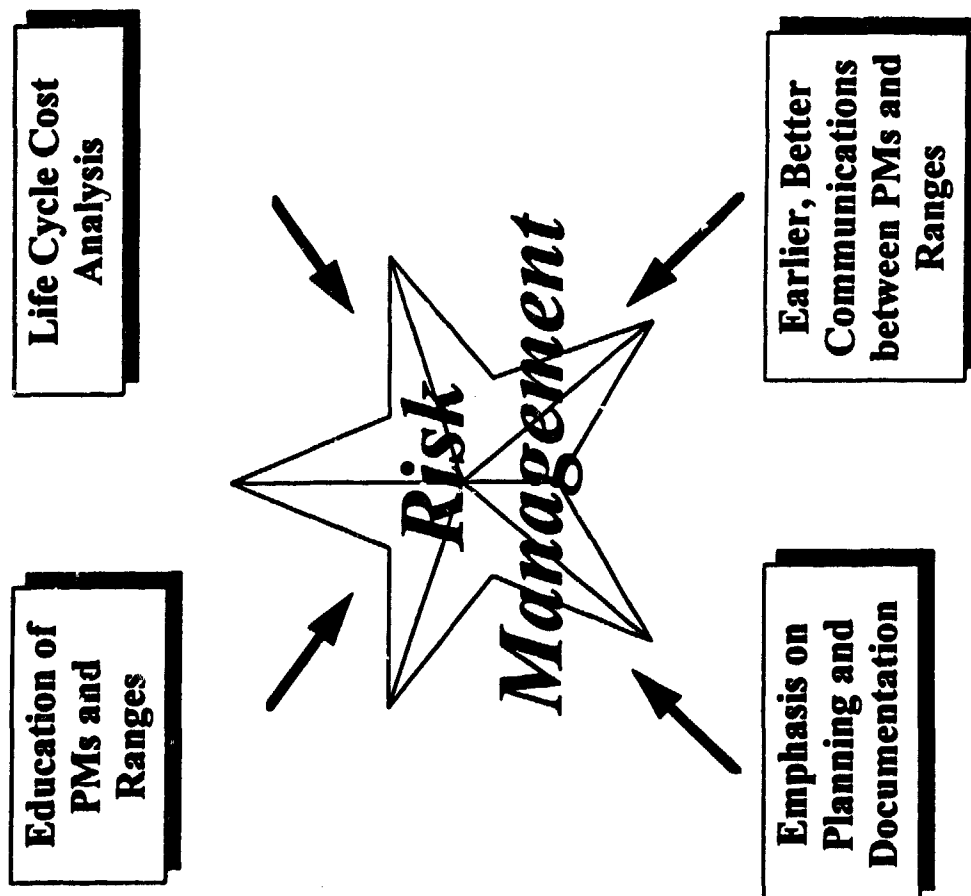
on mission effective-

ness, are weighed against the costs of the mix of environmental security and mission operations to respond to those risks.



DDTET&EP

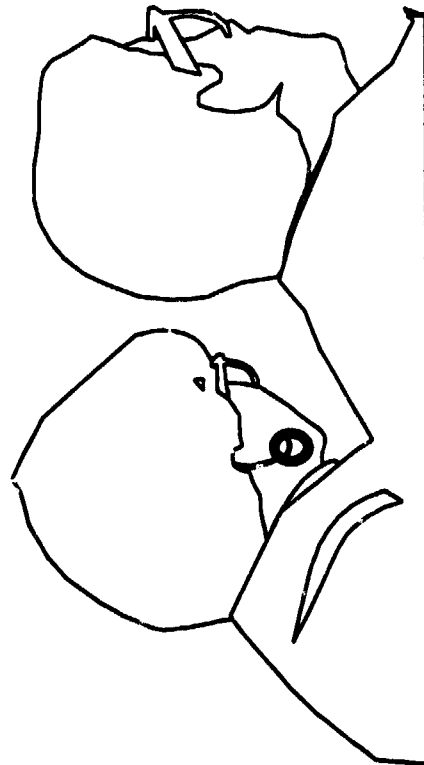
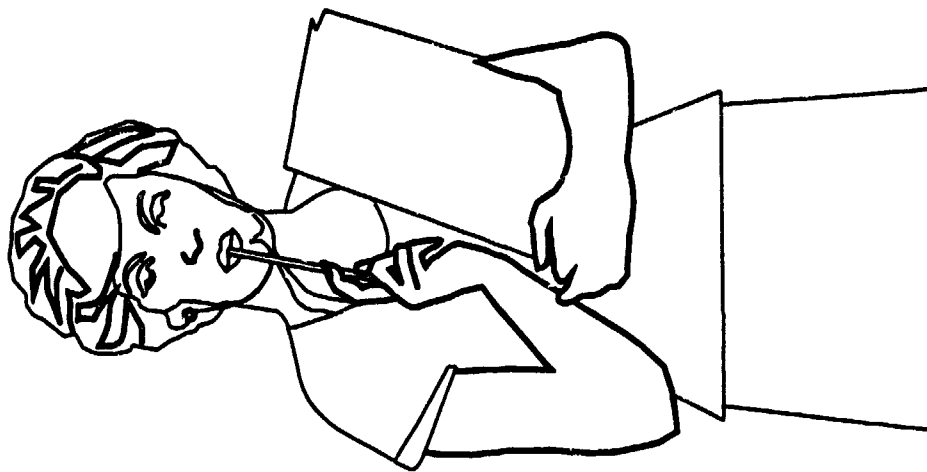
# *Environmental Protection Focus*





# *Risk Management*

*The Risk Management Approach* is the systematic process which provides:





- assessments of the environmental risks to the program's mission performance, resources and/or schedule;
- cost/benefit assessments of the measures that can be taken to mitigate these risks, to include the residual risk that would remain if these measures were applied singly or in combination;
- need for initiation of environmental research, development, test and evaluation.

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- cost/benefit assessments of the measures that can be taken to mitigate these risks, to include the residual risk that would remain if these measures were applied singly or in combination;
- need for initiation of environmental research, development, test and evaluation.



## *Summary*

What we protect and how we protect it may have changed, but the need to include environmental concerns in our acquisition strategy has become vital to our success. Risk management will play a pivotal role in that process.

**III. MECC ACCOMPLISHMENTS**  
**Mr. Bernard C. Perry, Chairman, MECC**



# **MRTFB ENVIRONMENTAL COORDINATING COMMITTEE ACCOMPLISHMENTS**

**April 26, 1994**

**Bernard C. Perry  
MECC Chairman**

**U.S. Army Test and Evaluation Command**

# **MECC ACCOMPLISHMENTS**

## **"ENVIRONMENTAL TECHNOLOGY"**

---

- **Strategic Environmental Research and Development Program**
  - ★ **MRTFB requirements included in call for proposals**
  - ★ **Participated on Technical Thrust Area Working Groups**
  - ★ **FY94 Draft program reflects some of our priorities**
- **Central Test and Evaluation Investment Program**
  - ★ **NAWC-AD (Patuxent River)**
  - ★ **Yuma Proving Ground**
- **Opportunities for Testing Environmental Technology**
- **MRTFB Environmental R&D Requirements Survey**



# **MECC ACCOMPLISHMENTS**

## **"COORDINATION"**

---

- **Advised Mr. Irv Boyles, DT&E(TFR) on environmental component of test and evaluation education**
- **Provided comments on draft DoD NEPA guidance**
- **Coordinated on several draft SERDP proposals**

# **MECC ACCOMPLISHMENTS**

## **"OUTREACH"**

---

- **MECC briefed at BMDO Environmental Meeting**
- **MECC briefed at Annual OSD Test Capability Budget and Investment Review**
- **MECC briefed Joint Ordnance Commanders (Environmental Subgroup) of the Joint Logistics Commanders**
- **Met with Mr. Jim Marsh, DUSD(ES)/ET**
- **Mr. Brian Higgins of DUSD(ES)/CM participated in**

**IV. OVERVIEW OF THE DEPARTMENT OF DEFENSE  
ENVIRONMENTAL PROGRAM**

**ENVIRONMENTAL SECURITY PROGRAM OVERVIEW**

**Ms. Sherri W. Goodman, DUSD(ES)**

# ENVIRONMENTAL SECURITY



SHERRI W. GOODMAN  
DEPUTY UNDER SECRETARY OF DEFENSE  
ENVIRONMENTAL SECURITY

# Environmental Security Mission

---

The mission of Environmental Security is to integrate environmental considerations into defense policies and practices; and has 6 major goals:

- ensure DoD operations *comply* with environmental laws;
- *clean up* and reduce risk from contaminated sites;
- be responsible *stewards* of the land DoD holds in public trust;
- *prevent pollution* at the source whenever possible;
- promote development of dual-use environmental *technologies*; and
- maintain in top condition DoD's *installations* and infrastructure.

***Environmental Security -- Defending Our Future***

# Senior Leadership Says...

---

*"America can maintain our lead in the world economy by taking the lead to preserve the world environment."*

-President, Bill Clinton, Earth Day Speech 21 April 1993

*"As we protect our environment, we must invest in the environmental technologies of the future which create jobs."*

*"And of course there are still dangers in the world:...severe environmental degradation the world over,...as the world's greatest power, we must therefore maintain our defense and our responsibilities. ...We worked to promote environmentally sustainable economic growth."*

-President, Bill Clinton, State of the Union Address, January 1994

*"The DoD under the Clinton Administration's leadership is deeply committed to a new role as defender of our environment. To strengthen this important effort, I have established a new position of Deputy Under Secretary of Defense for Environmental Security to ensure that environmental concerns become a key element of our national security."*

- Les Aspin, former Secretary of Defense

*"Where appropriate, DoD will adopt regulations that ensure protection of environmental interests while fostering a more effective and efficient acquisition process."*

-John Deutch, Under Secretary of Defense for Acquisition and Technology

## **Environmental Security -- Defending Our Future**

# Environmental Security

## What Does it Change?

	Old	New
<b>Investment Strategy</b>	Cleanup focus	P2/Energy Conservation/Technology
<b>Priority Level</b>	Back-bench	Leadership Role
<b>Orientation</b>	Domestic	Global
<b>Risk Approach</b>	Adversarial	Cooperative
<b>Base Structure</b>	Cold War Structure	Based on BUR, NPR, Roles & Missions
<b>Financial Supervision</b>	Minimum Financial Oversight	Improving Participation In PPBS Increasing Oversight of Program Execution
<b>Relationship with Public</b>	Antagonistic Environmental Groups	Partnering/Restoration Advisory Boards
<b>Innovation</b>	Technology Limited	Dual use Technology Industry/Government Partnerships
<b>Base Closures</b>	Adverse Economic Effects	Community Revitalization Fast Track Cleanup

***Environmental Security -- Defending Our Future***

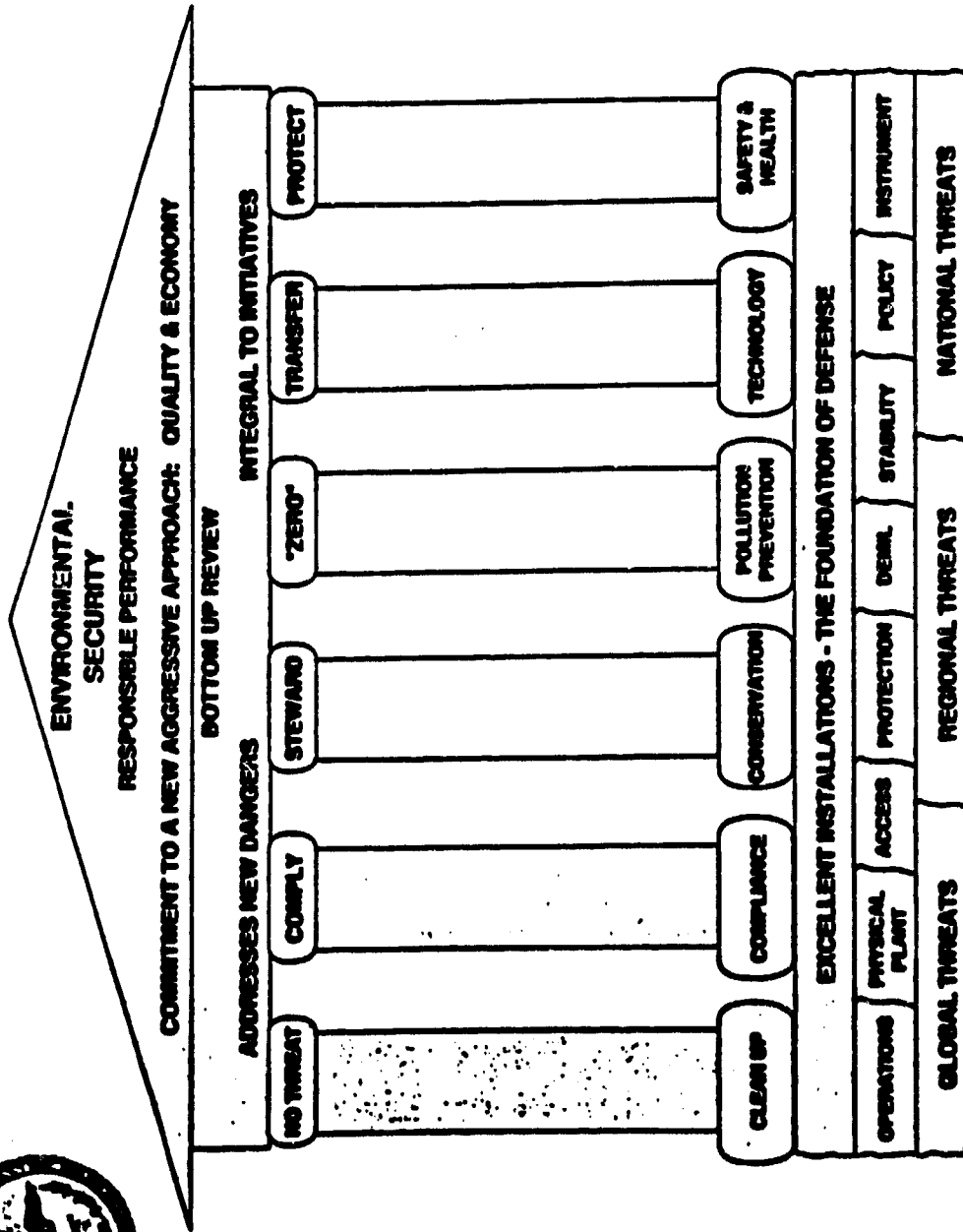


# Accomplishments to Date

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- Created Deputy Under Secretary of Defense (Environmental Security) position and office
  - Staffed & organized to manage most functions of ES mission
- Established Environmental Security Council
  - Consensus achieved on projected accomplishments and measures of merit
- Launched Fast-Track Cleanup at closure bases
  - Cleanup Teams at each closure base
  - Resolved indemnification issues
- Issued Defense Planning Guidance for ES requirements
  - Created budgeting task force to integrate ES into PPBS process
- Conducting installations analysis in support of readiness review
- Validating cleanup requirements
- Issued guidance to implement Pollution Prevention Executive Order
- Issued recycling policy
- Developed guidance for the Strategic Environmental Research and Development Program (SERDP) - tying investments to ES mission Requirements
- Created Environmental Security Technology Certification Program

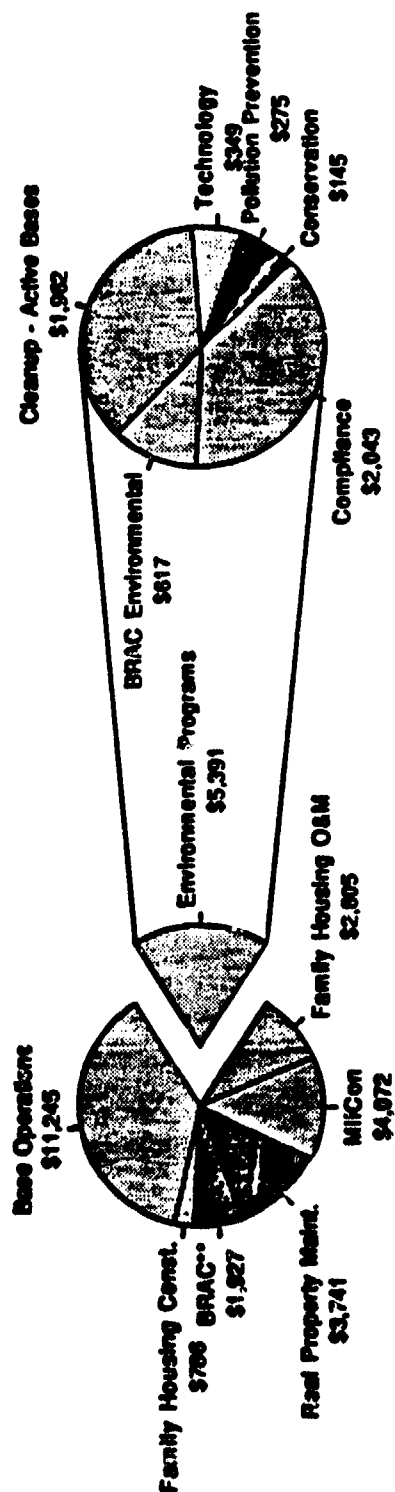
***Environmental Security -- Defending Our Future***



*Environmental Security -- Defending Our Future*

# Environmental Security Investments

(\$Millions)

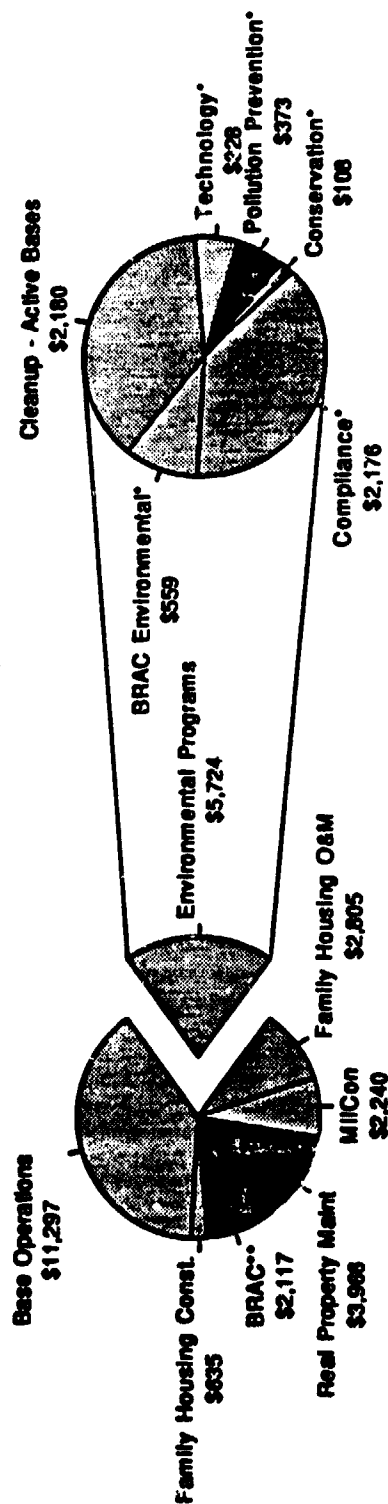


FY 1994 Appropriations

\*\*Excludes Cleanup and/or Compliance

# Environmental Security Investments

(\$Millions)



FY 1995 Budget

\* Estimated  
 \*\*Excludes Cleanup and/or Compliance

# Installations

Goals by the end of FY 1995

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- Maintain Readiness
- Right size base support & operations with BRAC 95
- Develop policies on life cycle costing of installations support & base management
- Priority Investment Program (PIP) for Military Construction

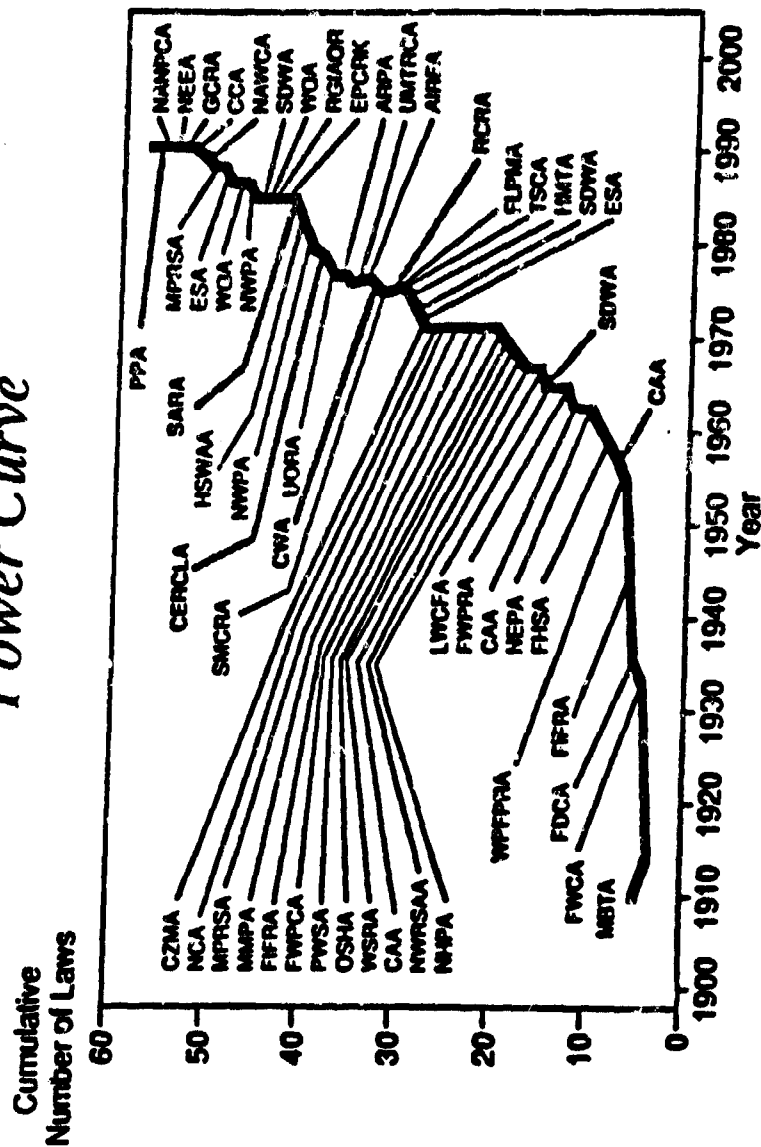
	Milcon **	Family Housing **	BRAC **	RPM *	Base Ops *
FY 1994	4,072	3,591	2,544	3,741	11,245
FY 1995	2,240	3,440	2,676	3,966	11,297

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\*Estimate

\*\*Includes Environmental Funding

# Federal Environmental Legislative Power Curve



# Cleanup

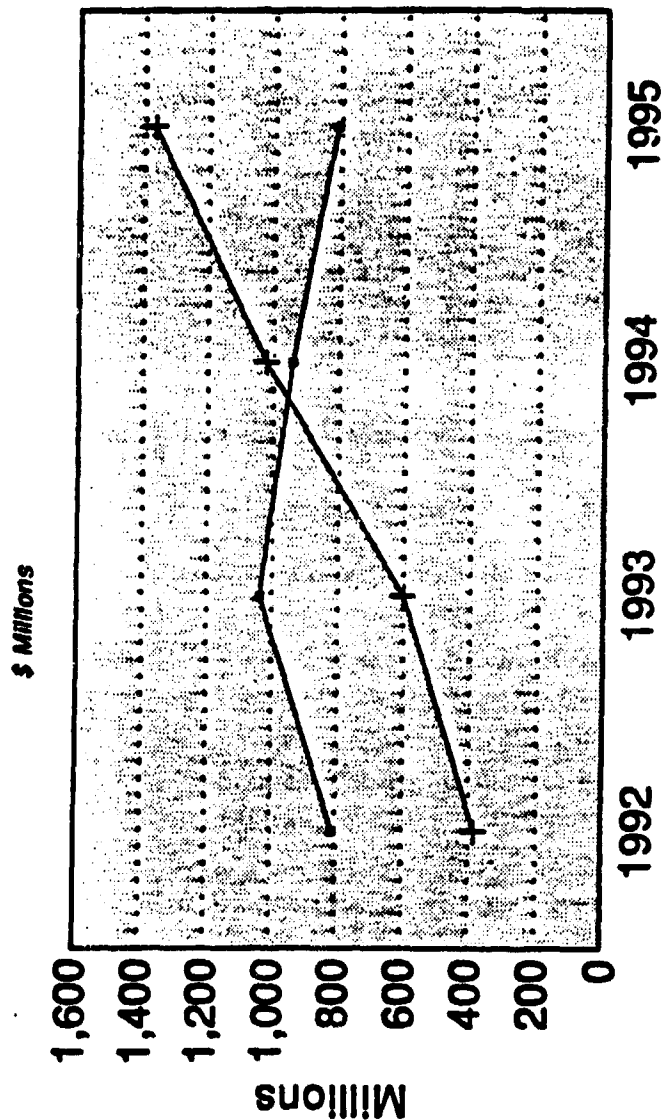
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- *Authorities*
  - ▶ Superfund
  - ▶ Executive Order 12580
  - ▶ Other Federal and State Laws
- *Goals for end of FY 1995*
  - ▶ Cleanup underway or complete at 60% of sites
  - ▶ Define generic remedies for 3 site types;  
Screen all sites for adoption
  - ▶ Implement "Fast Track" cleanup at closure bases
  - ▶ Develop risk management system
- FY 1995 request is \$2.2 billion, about 60% is for actual cleanup.

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# DoD Cleanup Trends

## \$ for Cleanup vs \$ for Identification and Analysis



Ident & Analysis --	811	1,039	941	810
Cleanup -	381	600	1,021	1,370

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# Compliance

---

- **Authorities**
  - ▶ Resource Conservation and Recovery Act
  - ▶ Federal Facility Compliance Act
  - ▶ Clean Water Act
  - ▶ Clean Air Act
  - ▶ Numerous State and Local Laws
- **Compliance Necessary to Maintain Readiness**
- **Goals for end FY1995**
  - ▶ 12 month installation self-audit cycle for major installations
  - ▶ 15% reduction in open enforcement actions from FY 1993
  - ▶ Upgrade 33 fire training areas (\$35 million)
  - ▶ Construct 4 wastewater treatment plants (\$265 million)
  - ▶ Upgrade 4,916 underground storage tanks (\$199 million)
- FY 1995 request is about \$2.2 billion, including about \$300 million in the MilCon request, including family housing.

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# Natural and Cultural Resource Conservation

---

- *Authorities*
  - ▶ National Environmental Policy Act
  - ▶ National Historic Preservation Act
  - ▶ American Indian Religious Freedom Act
  - ▶ Archeological Resources Protection Act
- DoD is steward for 25 million acres of public land
- *Goals for end of FY1995*
  - ▶ 60% of all bases have Integrated Natural Resources Management Plans
  - ▶ 40% of all bases have Cultural Resources Management Plans
  - ▶ 30% of all bases have Wetlands Inventories
  - ▶ 25% of all bases have Threatened & Endangered Species Inventories
- FY 1995 request is \$108 million
  - ▶ Legacy - \$10M
  - ▶ Service Conservation Accounts - \$98M

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# Energy Conservation

---

- **Authorities**
  - ▶ Energy Policy Act of 1992
  - ▶ Federal Energy Management Improvement Act of 1988
  - ▶ Energy Executive Order
- **Goals for end of FY 1995**
  - ▶ Accomplish highest payback projects on a priority basis
  - ▶ Achieve a 10% reduction in energy use per square foot by FY 1995
  - ▶ Life cycle costing in energy intensive equipment purchases and facilities design
- FY 1995 request is \$272 million

# Pollution Prevention

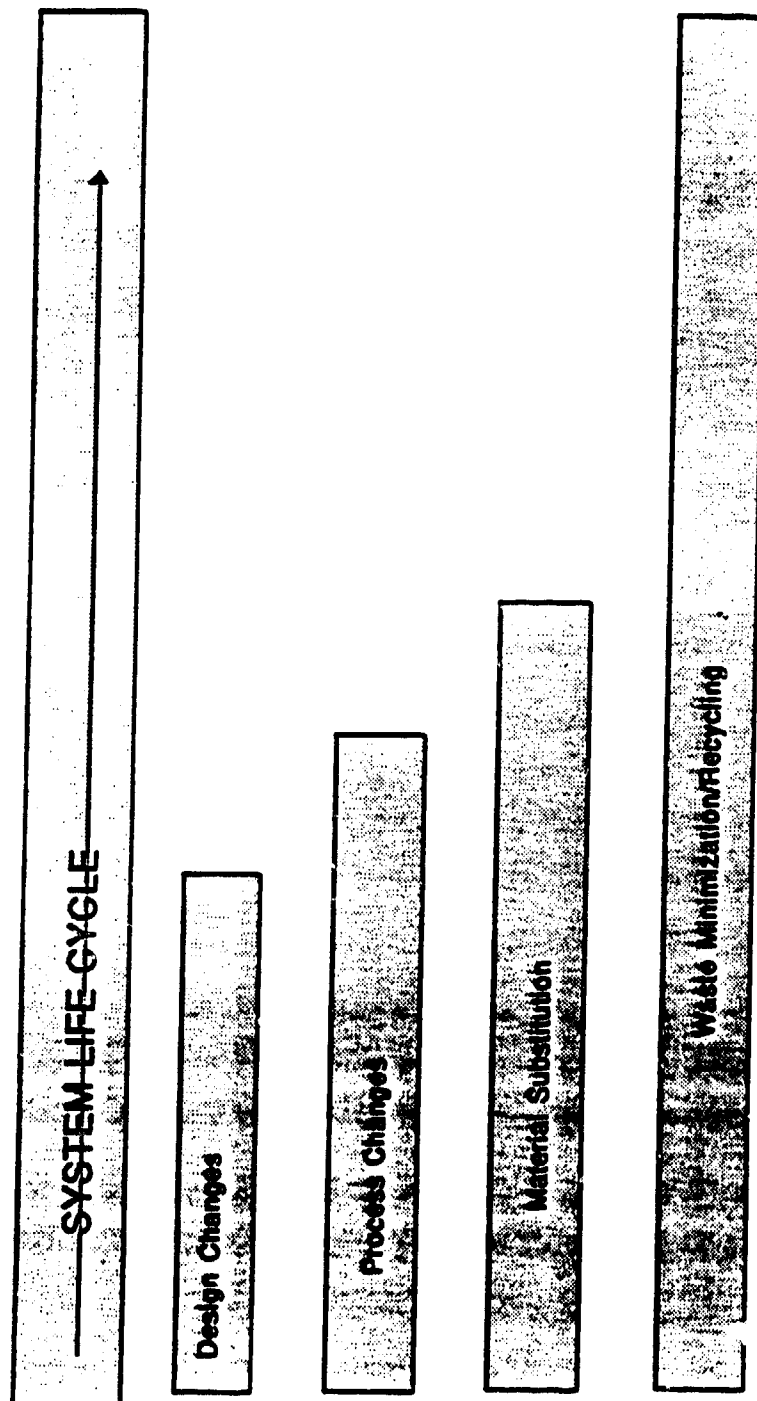
## A new focus for DoD

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- EPA Definition
  - The use of materials, processes or products that reduce or eliminate the creation of pollutants or wastes at the source
- Hierarchy of approaches
  - Source Reduction
  - Recycling/Reuse
  - Waste Reduction/Minimization
- DoD Context
  - Research and Development
  - Acquisition
  - Base Operations
- 80% of DoD's hazardous materials generation can be tied to weapons systems

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# P<sup>2</sup>Options Narrow over system life cycle



# Pollution Prevention

---

- **Authorities**
  - ▶ Pollution Prevention Act of 1990
  - ▶ Pollution Prevention Executive Order
  - ▶ Recycling Executive Order
- **Goals for end of FY1995**
  - ▶ Complete pollution prevention plans for every base
  - ▶ Design hazardous materials out of our weapons systems
  - ▶ Implement Toxic Release Inventory reporting
  - ▶ Reduce Hazardous Waste disposal by 10% from CY 1994
  - ▶ Reduce Municipal Solid Waste disposal by 10% from CY 1994
  - ▶ Reduce non-mission critical Ozone Depleting Substances (Class I) inventory by 10% from CY 1992 baseline
- FY 1995 request is \$373 million

***Environmental Security -- Defending Our Future***

# Environmental Security Technology Certification Program

## New Administration Initiative

---

- "As we protect our environment, we must invest in the environmental technologies of the future which will create jobs." - President Bill Clinton, State of the Union Address, January 1994
- **Description**  
Demonstrates and validates the most promising innovative environmental technologies that target DoD's most urgent environmental needs and are projected to pay back the investment within five years through cost savings and improved efficiencies
- **Benefits**
  - ▶ Accelerates the pace of remediation
  - ▶ Focuses on emerging new dual use technologies
  - ▶ Demonstrates innovative pollution prevention technologies
  - ▶ Improves Defense readiness by reducing drain on resources caused by commitments, e.g. environmental restoration and waste management
- **Goal**  
By FY 2000, facilitate a 50% increase in the number of completed environmental technology demonstrations that are validated as successful, as compared to FY 1995
- FY 1995 request is \$15 million

***Environmental Security -- Defending Our Future***

# Environmental Technology

## Goals for the end of FY 1995

---

- Establish a baseline which quantifies the number of demonstrations that have been completed successfully
- Develop a DoD environmental education, training and career development plan
- FY 1995 request is \$358 million
  - \$ 30M DERA
  - \$ 15M ESTCP
  - \$112M SERDP
  - \$137M Science & Technology
  - \$ 64M Demonstrations

*Environmental Security -- Defending Our Future*



# Major Issues

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- Base Structure Post 1995
- Risk Management in Cleanup
- Technology Certification
- Internalize Environmental costs in the Acquisition Process

***Environmental Security -- Defending Our Future***

**ARMY ENVIRONMENTAL PROGRAM OVERVIEW**

**Mr. Phil Huber, DASA(E,S,&OH)**



# **THE ARMY ENVIRONMENTAL PROGRAM IN SUPPORT OF RANGE AND TESTING MISSIONS**

**Mr. Phil Huber  
Assistant for Pollution Prevention and Conservation  
(Environment, Safety and Occupational Health)  
OASA (I,L&E)**

# **RELEVANCE TO MAJOR RANGE AND TEST FACILITIES**

- **The Army Environmental Strategy**
- **NEPA**
- **Pollution Prevention**
- **Conservation**
- **Training**
- **Public Involvement**

# ARMY ENVIRONMENTAL STRATEGY

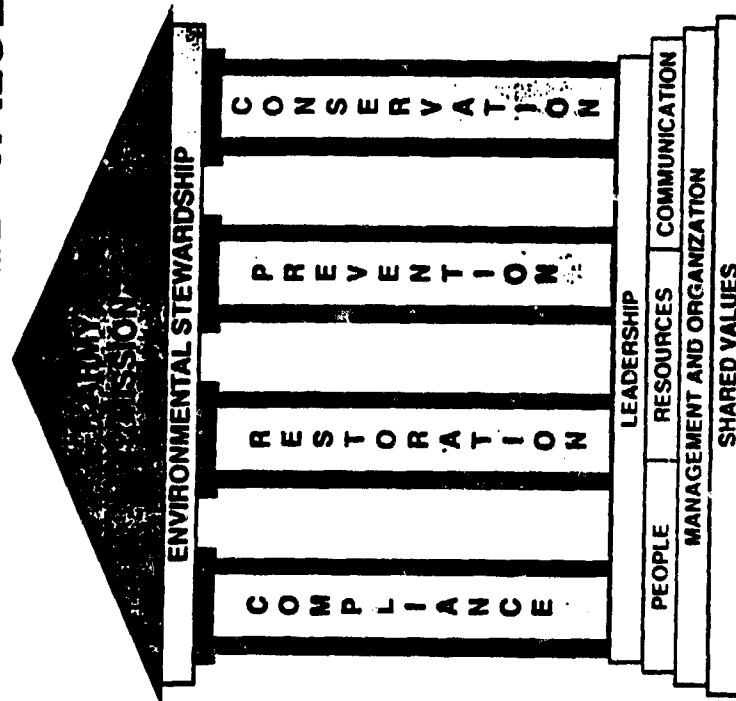
*The Vision: The Army will be a national leader in environmental and natural resource stewardship for present and future generations as an integral part of our mission.*

- Common theme as other Services
- Practical application of strategy at APG and WSMR
- There is room for more "leaders"
- Compliance theme, but also protects the mission



## The Army Environmental Program

# THE ARMY ENVIRONMENTAL STRATEGY BASED UPON SHARED VALUES



ASA (I,I&E)



## The Army Environmental Program

# The Army's Environmental Challenge

## Installations



### Military

- 12 Million Acres
- 200,000 Buildings & Facilities
- 10,500 Miles of Sewage Line
- 3,100 Miles of Railroads
- \$4.5 Billion Annually Repair & Maintenance



### Civil Works

- 11 Million Acres
- 8,500 Miles of Levees
- 235 Locks
- 4,350 Recreational Sites
- \$1.5 Billion Annually Repair & Maintenance

ASA (1,1&E)



## The Army Environmental Program

### The Army's Environmental Challenge

#### Training

- Maneuver training inherently destructive
- Increasing land requirement for modern combat training



ASA (I,L&E)





## The Army Environmental Program

### The Army's Environmental Challenge

#### Industrial Activities

- Munitions
- Manufacturing
- Depots



ASA (I,L&E)



## The Army Environmental Program

### The Army's Environmental Challenge

#### Civil Works

- **Navigation**

12,000 miles of inland waterway  
114 major commercial harbors

- **Flood Control**

383 lakes/reservoirs  
8,500 miles of levees

- **Hydro Power**

74 projects  
83.9 billion kilowatt hours generated

- **Environmental**

\$406 million in budget plus \$400 million in work for others  
Management of 11.5 million acres  
Regulation of water resources & wetlands



ASA (I,L&E)

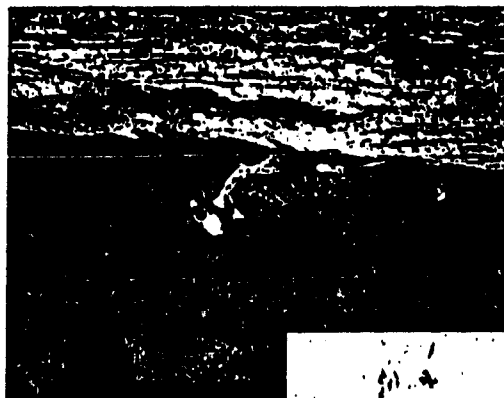


## The Army Environmental Program

### The Army's Environmental Challenge

#### Endangered Species

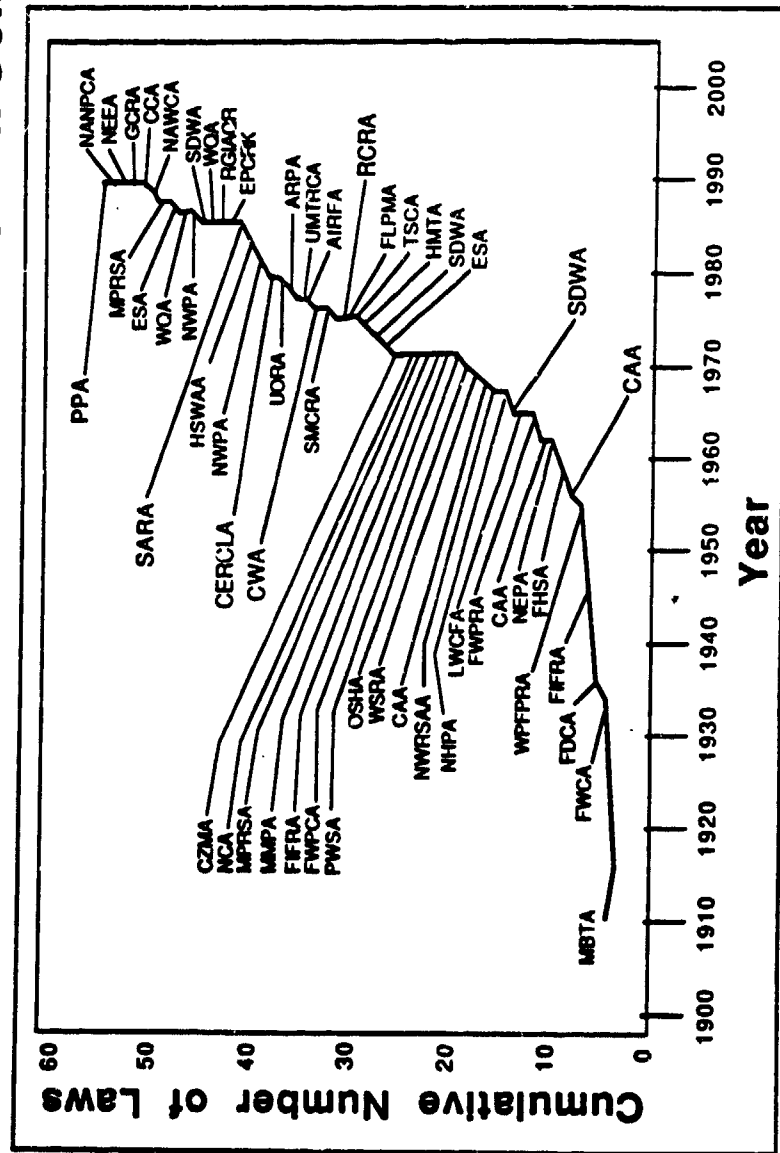
- Love the Army
- Impact Training
- Stringent Laws
- Intensive Management



ASA (I,L&E)



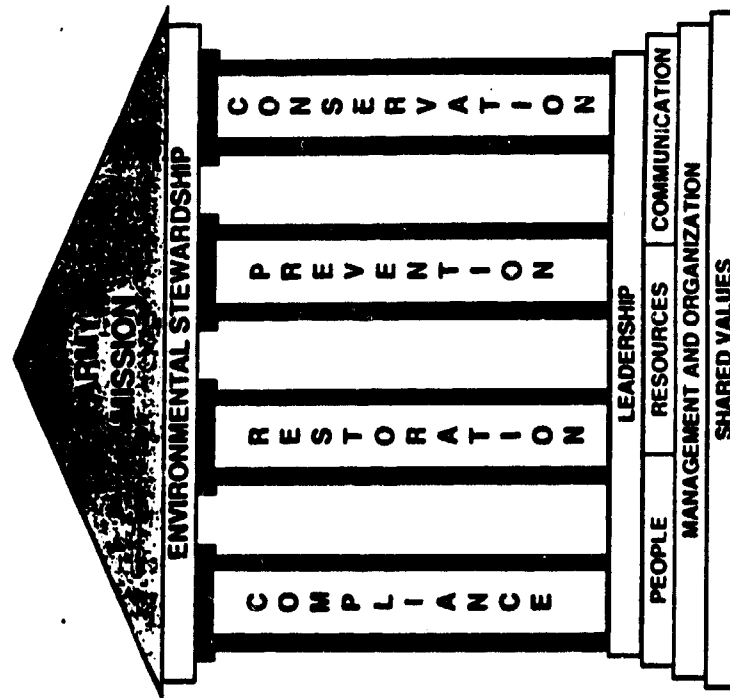
# FEDERAL ENVIRONMENTAL LEGISLATIVE POWER CURVE

**ASA (I,L&E)**



## The Army Environmental Program

# COMPLIANCE



### General Goal Statement:

Ensure that all Army installations (CONUS and OCONUS) attain and sustain compliance in the face of changing requirements.

### Focus of Objectives:

- Attain and sustain compliance at all Army installations and communities.
- Establish a feedback system for decision makers on environmental issues.
- Develop and adopt most cost effective approaches to compliance.
- Develop and adopt regional approaches to compliance.

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## The Army Environmental Program

### COMPLIANCE

#### Challenges:

- Determine Total Requirements
- Program and Budget Resources
- Track Execution/Correct Deficiencies
- Centralize Information/Data Management
- Instill Awareness and Provide Training
- Move Beyond Compliance to Pollution Prevention and Conservation/Preservation

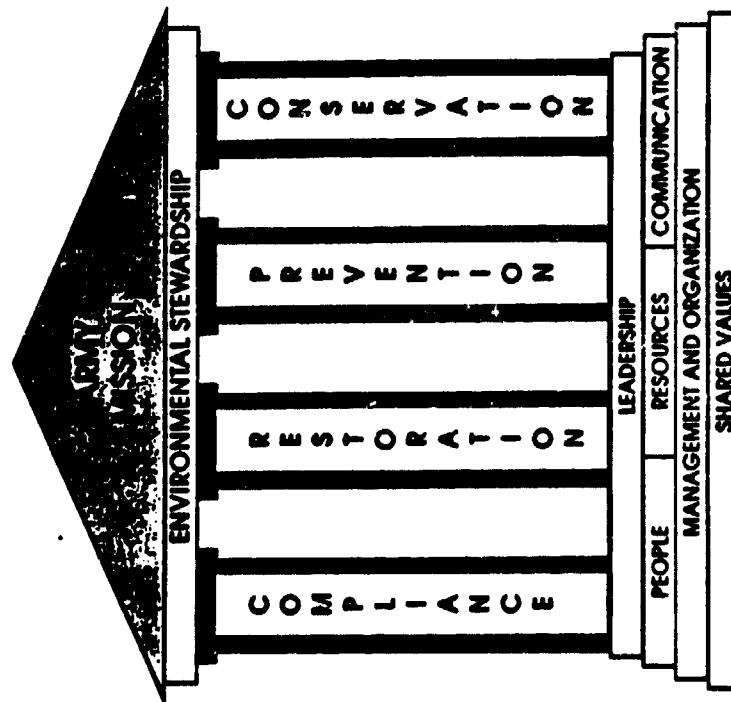


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## The Army Environmental Program

### RESTORATION



#### Focus of Objectives:

- Protect human health and the environment.
- Clean-up contaminated sites as quickly as resources permit.
- Expedite clean-ups to facilitate disposal of excess Army properties.
- Establish and maintain a positive relationship with regulators, local communities and the general public.
- Identify and fulfill environmental responsibilities for contamination at OCONUS sites in accordance with laws, treaties and guidance.

#### General Goal Statement:

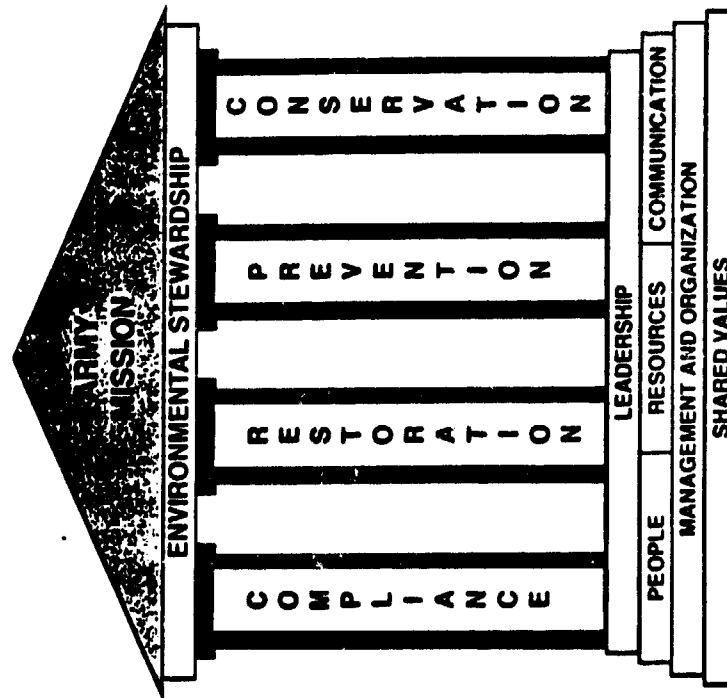
Clean up contaminated sites as quickly as resources permit, to protect human health and the environment.

ASA (I,L&E)



# The Army Environmental Program

## PREVENTION



### General Goal Statement:

Adopt and implement integrated management approaches, procedures and operations, in all Army mission areas, to minimize all environmental contamination and pollution.

### Focus of Objectives:

- Use a holistic approach to pollution prevention which looks at all environmental media collectively.
- Systematically eliminate hazardous materials use and operations or processes that produce hazardous/solid waste and other emissions.
- Instill the pollution prevention ethic throughout the entire Army community and all mission areas.

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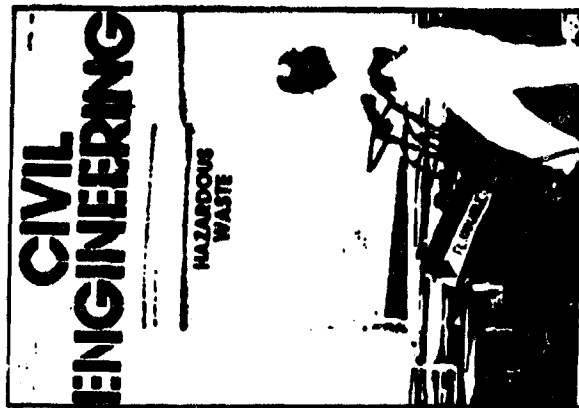


## The Army Environmental Program

### PREVENTION

#### Pollution Prevention Initiatives

- National Center for Defense Environmental Excellence
- 5 - year HM/HW Management Plan
- Decentralized Funding (HM/HW Disposal)
- Recycling
- Funding for HAZMIN Technology Development in ECAP (SERDP)
- HAZMIN Efforts and New Awards Program
- AMC Establishment of the Army Pollution Prevention Support Office

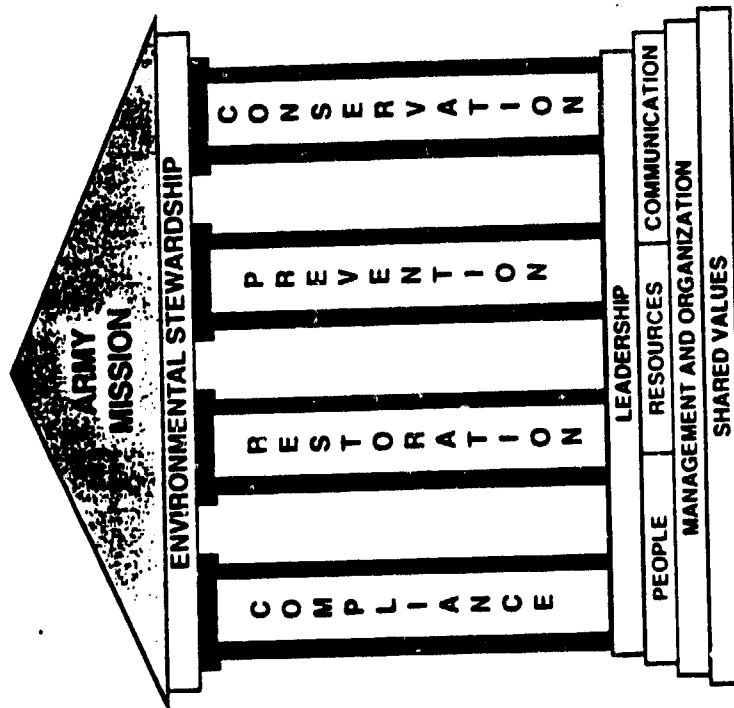


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## The Army Environmental Program

# CONSERVATION



### General Goal Statement:

Conserve, protect and enhance environmental, natural and cultural resources using all practical means consistent with the Army mission, so present and future generations may use and enjoy them.

### Focus of Objectives:

- Assess, conserve, preserve and restore ecological resources to maintain all installation carrying capacities.
- Be responsive to global environmental, natural and cultural resource concerns.

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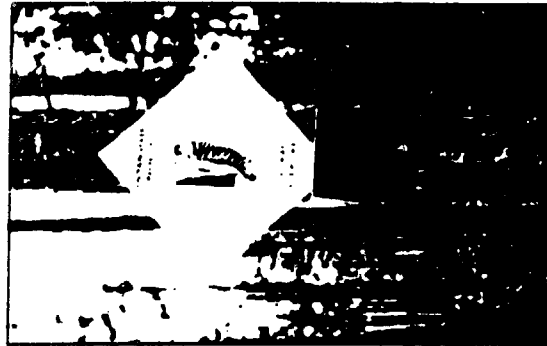
## The Army Environmental Program

# CONSERVATION

### Natural and Cultural Resources Management Program - An Army Tradition

#### Major Activities:

- Land Use Management
- Integrated Training Area Management (ITAM)
- Threatened/Endangered Species
- Historic and Archeological Resource Preservation
- Forest Management
- Agriculture/Grazing Leases
- Fish and Wildlife Management
- Grounds Maintenance
- Pest Management
- Outdoor Recreation



ASA (I,L&E)



## The Army Environmental Program

# NATURAL RESOURCES STEWARDSHIP THROUGH INTEGRATED TRAINING AREA MANAGEMENT (ITAM)

- Environmental Awareness
- Land Condition-Trend Analysis
- Decision Support Systems
- Land Rehabilitation and Maintenance
- Training Requirements Integration
- Threatened/Endangered Species



ASA (I,L&E)



## The Army Environmental Program

### CONSERVATION



#### Conservation/Prevention Challenges

- Develop and Implement "Carrying Capacity" Concept
- Ensure Consideration of Environmental Consequences and Take Mitigative Measures for any Actions/Projects
- Preserve and Enhance Cultural and Natural Resources on Army Installations
- Foster an Environmental Ethic
- Achieve and Maintain Adequate Environmental Staff

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## The Army Environmental Program

### ENVIRONMENTAL RESEARCH AND SUPPORT

- The US Toxic & Hazardous Material Agency (USATHAMA)
- Army Environmental Hygiene Agency (AEHA)
- Army Environmental Policy Institute (AEPI)
- The Construction Engineering Research Laboratories (CERL)
- The Waterways Experiment Station (WES)
- Engineering and Housing Support Center (EHSC)
- Other Army Materiel Command (AMC) and Corps of Engineers (COE) Labs
- Tri-Service Project Reliance
- Natural Defense Center for Environmental Excellence (AMC)
- Strategic Environmental Research & Development Program (SERDP)
- Legacy Resource Management Program

ASA (I,I&E)

# **NATIONAL ENVIRONMENTAL POLICY ACT**

- A “range-wide” plan that has been assessed is essential
- Dynamics of range and testing mission requires tiering on the range-wide plan
- Public involvement is critical
- Endangered species and cultural resources consultation to support the plan and its assessment

# **POLLUTION PREVENTION**

- **Test range operations and emergency EOD exempt from RCRA**
- **Pollutant inventory required for test products and by-products**
- **Acquisition Program Managers involved in the full life-cycle**
- **Contractor operations may need more oversight**



# CONSERVATION

- New legislation may embrace compliance aspects for Endangered Species, Sikes and Clean Water Acts
- Emphasis is on mission and resource protection
- Knowledge of the resource base is essential
- Partnership initiatives are growing, especially with other Federal agencies

# **TRAINING**

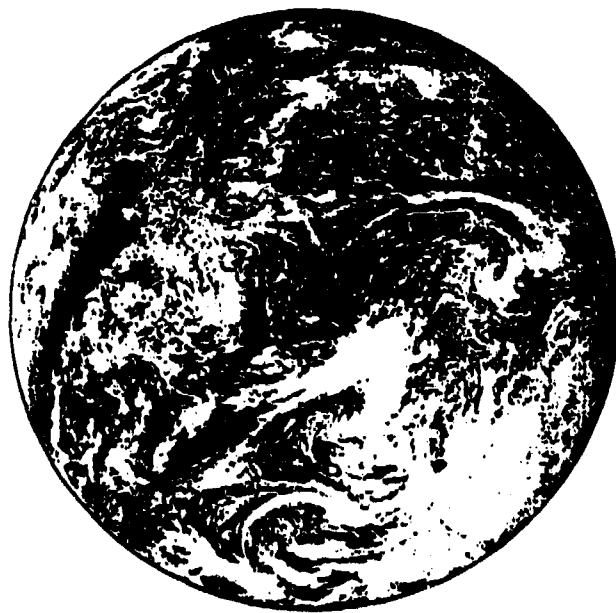
- **Environmental Training Master Plan approved and being executed**
- **Army's Training & Doctrine Command has the principal action for institutional training**
- **Environmental Training Center prototype at Fort Sill**
- **Major Legacy initiative with Interservice Training Review Organization (ITRO)**

## **PUBLIC INVOLVEMENT**

- **Growing interest in what is happening on our installations**
- **Growing awareness of the extent of our environmental impacts**
- **Active public information programs are stemming the tide of complaints**
- **Showing the public our installations is creating advocates for our stewardship**



## The Army Environmental Program



**"We Don't Inherit the Earth from Our Ancestors,  
We Borrow It from Our Children."**

**ASA (I,L&E)**

**NAVY ENVIRONMENTAL PROGRAM OVERVIEW**

**Ms. Elsie L. Munsell, DASN(E&S)**

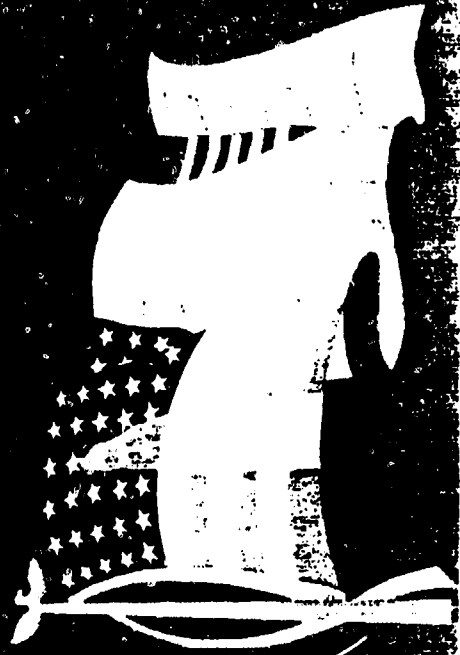
Department of the Navy  
Leading the way in  
Environmental Protection



# ESTABLISH A VISION

---

The Department of the Navy will accomplish its mission for the national defense and will be a leader in environmental security affairs.



# WE WILL:

- MEET ALL ENVIRONMENTAL CHALLENGES
- DEVELOP INNOVATIVE AND COST EFFECTIVE ENVIRONMENTAL PROGRAMS
- TRAIN FOR A SOLID ENVIRONMENTAL ETHIC IN ALL PERSONNEL
- MAINTAIN THE HIGHEST LEVELS OF STEWARDSHIP FOR THE RESOURCES IN OUR TRUST
- WORK WITH OTHERS TO ACHIEVE MUTUAL ENVIRONMENTAL GOALS



# DEPARTMENT OF THE NAVY TEAM

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Secretary of the Navy

Assistant Secretary of the Navy  
(Installations and Environment)

Chief of Naval Operations

Commandant of the Marine Corps

Director, Environmental  
Protection and OSH Division  
Naval Facilities  
Engineering  
Command

Director, Facilities and  
Service Division

# PROGRAM ELEMENTS

- Environmental Restoration
- Environmental Compliance
- Stewardship of Natural & Cultural Resources
- Pollution Prevention



- Technology Transfer
- Public Outreach

# PLASTIC REDUCTION IN MARINE ENVIRONMENT (PRIME)

---

- Reduce plastic packaging in fleet
  - ▶ Over 650,000 stock items reviewed
  - ▶ Over 350,000 (57%) successful reductions
  - ▶ Fleet operational changes resulted in immediate reduction in discharges

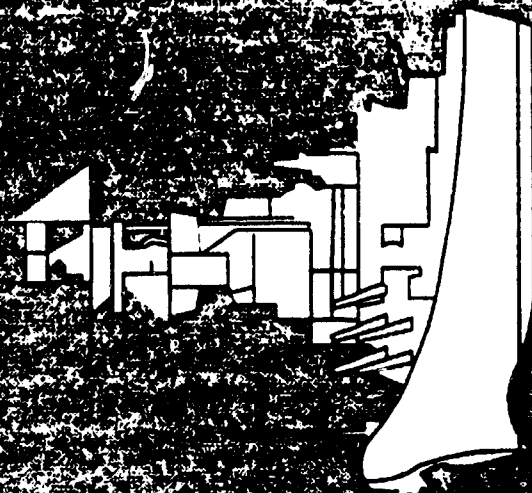
# PROTOTYPE PLASTIC PROCESSOR



# INNOVATIVE TECHNOLOGY FOR SHIP DISCHARGES

---

- Establish stable targets to support innovative vessel technologies
- Navy willing to lead the way
- Authorize National standards within CWA

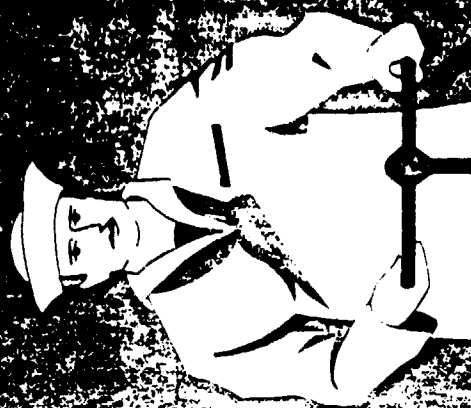


# REDUCE OZONE DEPLETING SUBSTANCES (ODS)

---

- Four part program
  - ▶ Conservation
  - ▶ Recycling
  - ▶ Substitute RDT&E
  - ▶ Strategic reserve

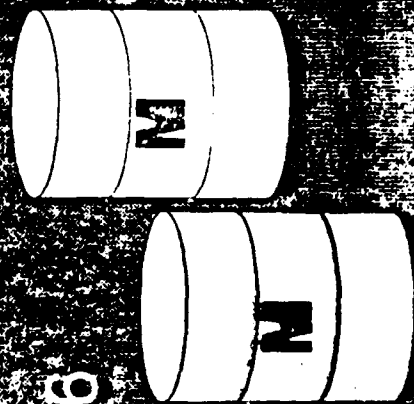
- DoN earns EPA ODS award in 1992 & 1993



# HAZARDOUS MATERIALS CONTROL & MANAGEMENT (HMC&M)

---

- Navy and Marine Corps HMC&M Policies
- "CHRIMP" afloat & ashore
- Specifications & standards review
- Implementation of E.O. 12856



# CONSERVATION - THE CHALLENGE

- 208 Installations
- 40,000 acres of protected wetlands
- 214 endangered species on 117 bases
- 5 Ecological Reserves





## FUTURE CHALLENGES

- Management of costs
- Develop and use new technologies
- Implement pollution prevention strategies
- Protect and maintain access to land, air, and

sea

Remarks  
Elsie L. Munsell  
Deputy Assistant Secretary of the Navy  
Environment and Safety

April 26, 1994

I. (Concluding slide show)

II. That last bullet is a big part of environmental security. That is global, regional, and local impacts of environmental issues on our national defense posture and mission.

III. So now lets talk about your business.

IV. There is a fair body of people out there who believe that when you balance environmental protection against weapons system development, environment wins. Some of them are willing to sue, and they have the means and the law to do so.

V. Absent sound environmental information, that damage may well be presumed.

VI. We have an AEGIS cruiser with lots of collateral equipment that is waiting for a court to decide whether we can do shock trials.

VII. DoD is actively engaged in implementing 5000.2 and we are working daily on DAB/NPDM environmental information. My office is prepared to non-concur in milestone decisions if no responsible job has been done on the environmental analysis.

VIII. If we are to continue to do business on a regular, scheduled basis, the test and evaluation community has got to get their hands on the homework.

A. Each test facility and range has an immediate need for comprehensive environmental information about the facility.

B. That information should be processed as a programmatic Environmental Impact Statement under NEPA.

C. The programmatic EIS will serve as a baseline for test specific documents.

D. The preparation of that PEIS will also enhance your relationships with the public and the environmental community. You should be talking to those who are concerned about range activity.

E. I strongly recommend that you support information sharing across DoD about range capabilities and characteristics. That

data, both a baseline and added information developed for specific tests, will serve to support the acquisition community as they choose test sites, and will reduce overall costs to maintain readiness.

F. You should know that the environmental regulatory bodies, federal, state and local, as well as the public interest groups, are increasingly interested in range management issues.

1. Every test facility should know its sites of potential contamination, and be prepared to study and remediate those sites where they present a potential hazard to the environment. Runoff to surface waters is a growing concern, as well as soil contamination and groundwater pollution.

G. We don't yet know all of what issues the new Clean Air Act regulations will present, but we are already wrestling with the conformity rules, which provide that we may not conduct an activity that will violate a state implementation plan.

IX. I know that I am preaching to the choir to a large extent, but I want to convey to you my real sense of urgency about these issues.

X. The major ranges and test facilities are some of the largest and most visible landholders in DoD. The environmental job you do represents a significant part of the Environmental Security Package. I hope that those of us in the ES world can help you do your part with excellence and integrity.

XI. Thank you.

**AIR FORCE ENVIRONMENTAL PROGRAM OVERVIEW**

**Col. Cullen A. Hollister, DASAF(E,S&OH)**

# **Air Force Environmental Program**



**Col Cullen A. Hollister, P.E.**  
**Assistant for Reserve Component Affairs**  
**Deputy Assistant Secretary of the Air Force**  
**(Environment, Safety and Occupational Health)**

## OVERVIEW

- Organization
- Clean Up
- Compliance
- Pollution Prevention
- Conservation
- Ranges
- NEPA/Acquisition

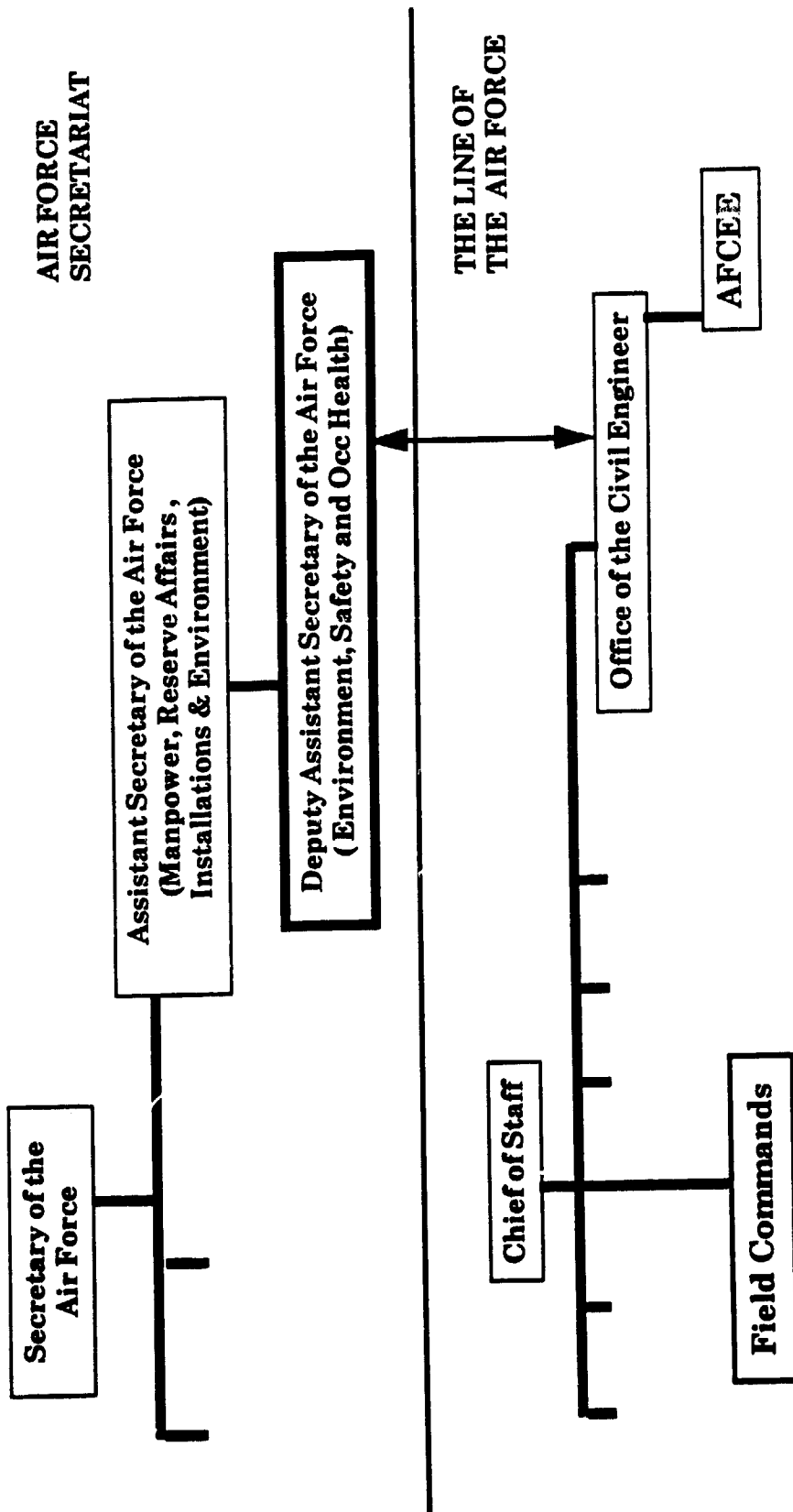
## THE NATIONAL AGENDA

- President Clinton committed to improved environmental performance
  - Environmental advisor on White House staff
  - Intends to elevate EPA to Cabinet status
- Vice President Gore is strong advocate of elimination of ozone depleting chemicals
- OSD protects environmental budget in recent budget reduction exercises
- OSD Responsible Office elevated from Deputy Assistant to Deputy Under Secretary of Defense

**SAF/MIQ**

Environment, Safety & Occ Health

# ORGANIZATION





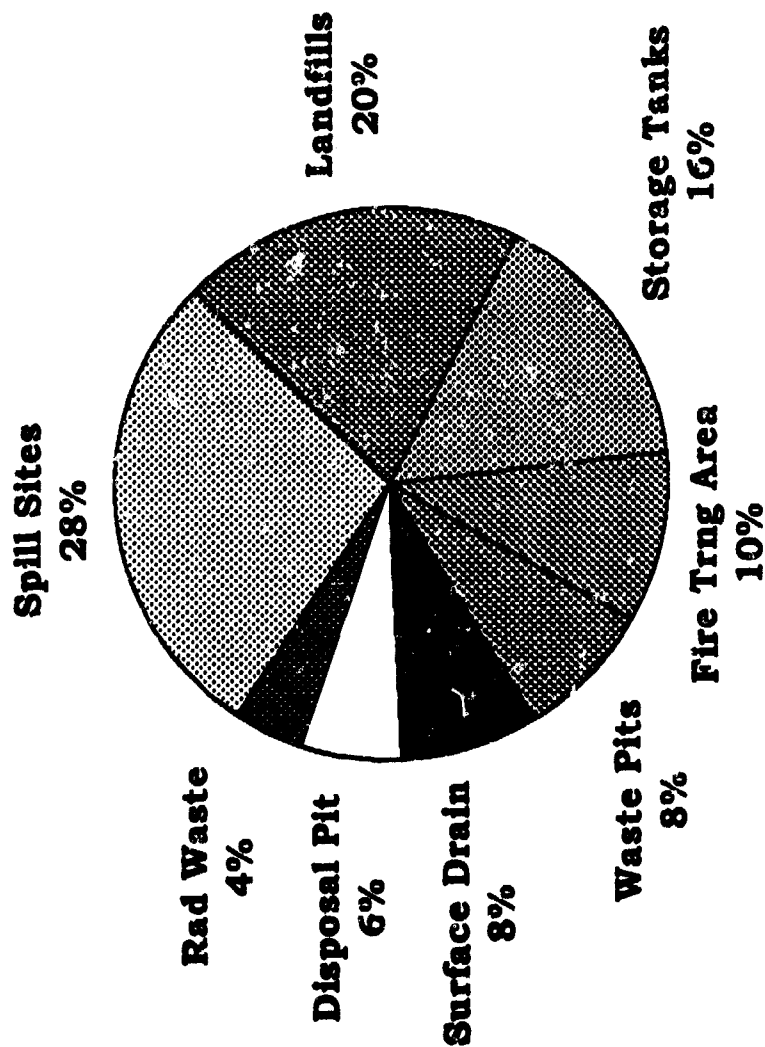
**CLEANUP  
TODAY'S INFLUENCES**

- Public concern over health risk
- Requirements to quickly transition closure bases for public use

## **CLEANUP ISSUES**

- Reducing costs and streamlining the cleanup process. USAF is
  - Negotiating standards based upon future land use
  - Using interim cleanup measures
  - Using innovative technologies/presumptive remedies
    - » Bioventing
    - » Natural attenuation
- Getting/keeping experienced people. USAF has
  - Expanded ROTC environmental scholarships
  - Developed an AFA Environmental Curriculum and AFIT Environmental Masters Program
  - Established an extensive continuing education program

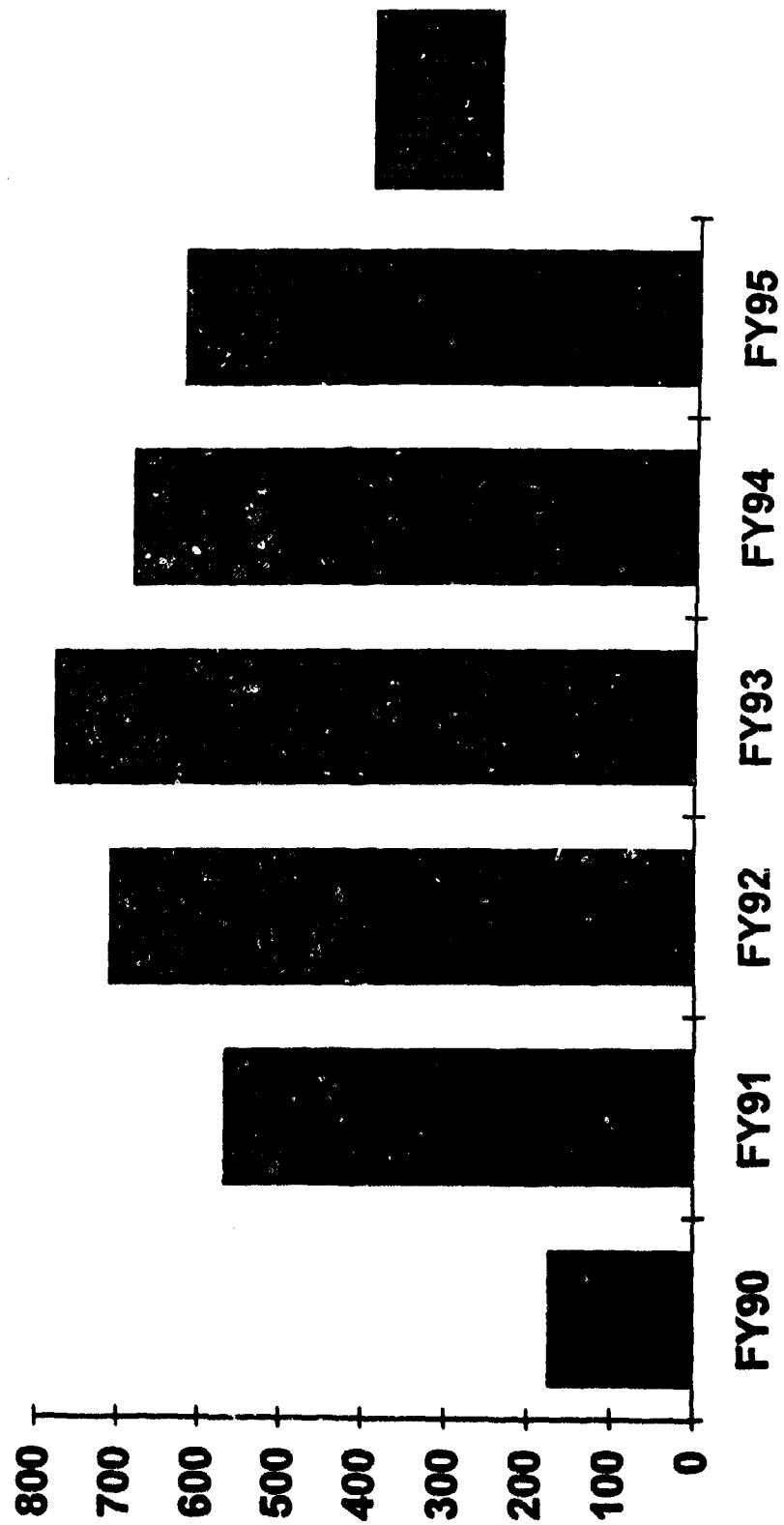
**Clean Up - Sites  
Total Sites -- 4859**



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## CLEAN UP Funding

(\$ MILLIONS)



## CLEAN UP INITIATIVES

- Management Action Plans
- Risk-reduction Approach
- Clean Up to Land Use
- Investment in R&D

**CLEANUP -  
NEW GOAL**

**PROPOSED GOAL:**

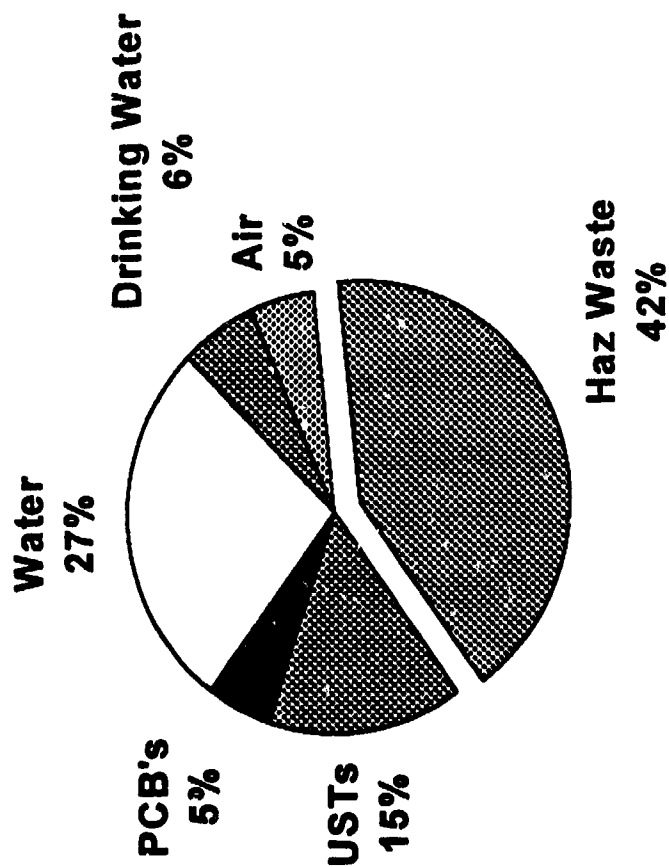
**Reduce all sites in the high and medium  
risk categories to low risk by the year 2000.**

**COMPLIANCE -  
TODAY'S INFLUENCES**

- Increased public awareness of importance of protecting the environment
  - Congress translates public concern into series of environmental laws
- Public desire to hold Federal Government to same standard as private sector
  - Congress waves Federal sovereign immunity - must now pay fines and penalties

# COMPLIANCE

Total Open Enforcement Actions: 191





**COMPLIANCE  
GOAL**

**U.S. AND TERRITORIES**

- Ensure our present operations comply with all Federal, state and local environmental standards.
- No notices of violation is the measure of merit.

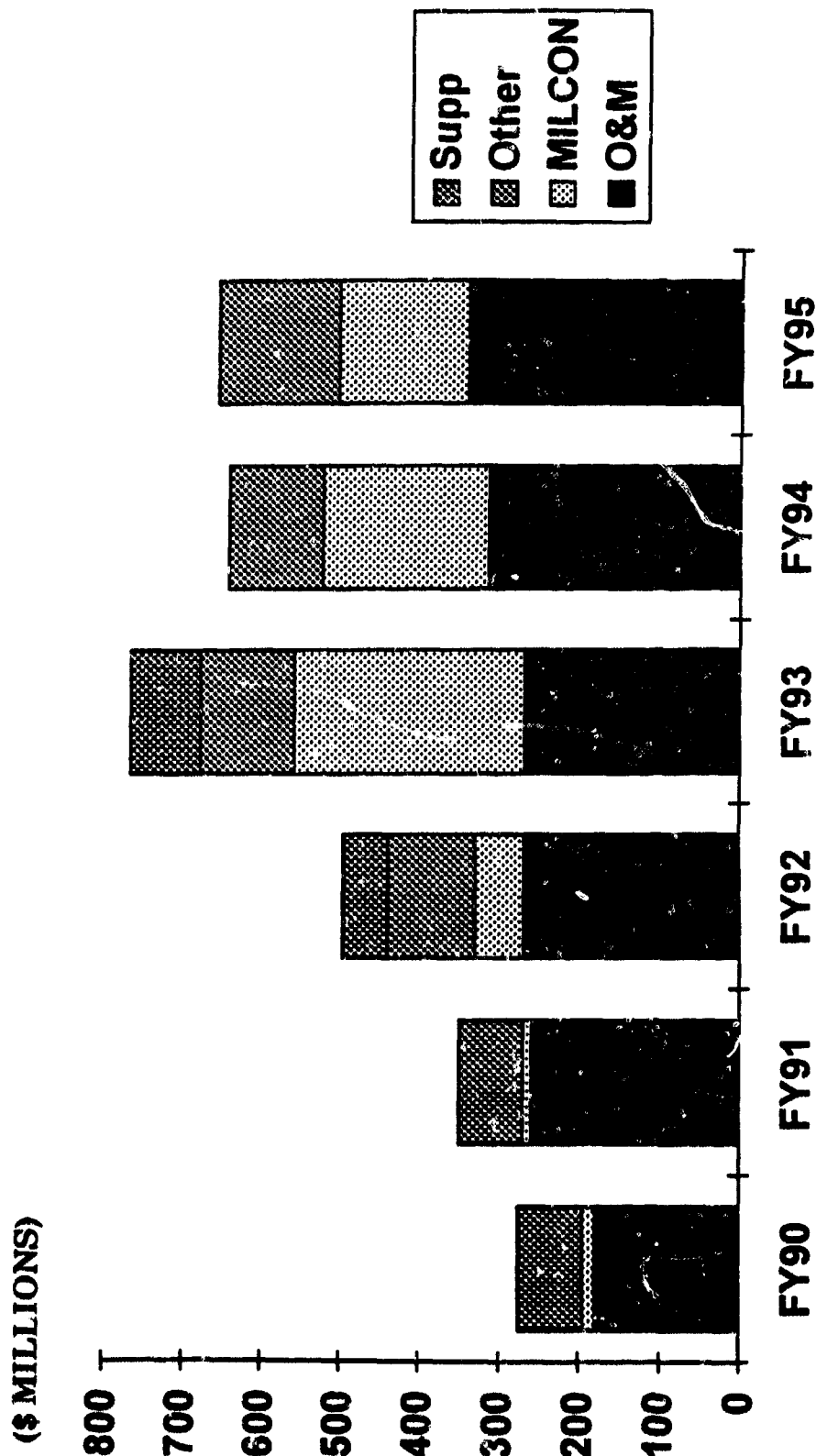
## COMPLIANCE - INVESTMENT

- Focus on infrastructure systems that are driving the majority of enforcement actions
- Targeted systems include:
  - Wastewater treatment systems
  - Hydrant fuel systems
  - Corrosion control facilities
  - Underground storage tanks
  - Fire training pits

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# COMPLIANCE FUNDING



## COMPLIANCE ISSUES

- Federal Facilities Compliance Act
- Stormwater Permits
- Clean Air Act
  - Conformity Impacts
  - Source Operating Permits
- Undefined Requirements

## **POLLUTION PREVENTION**

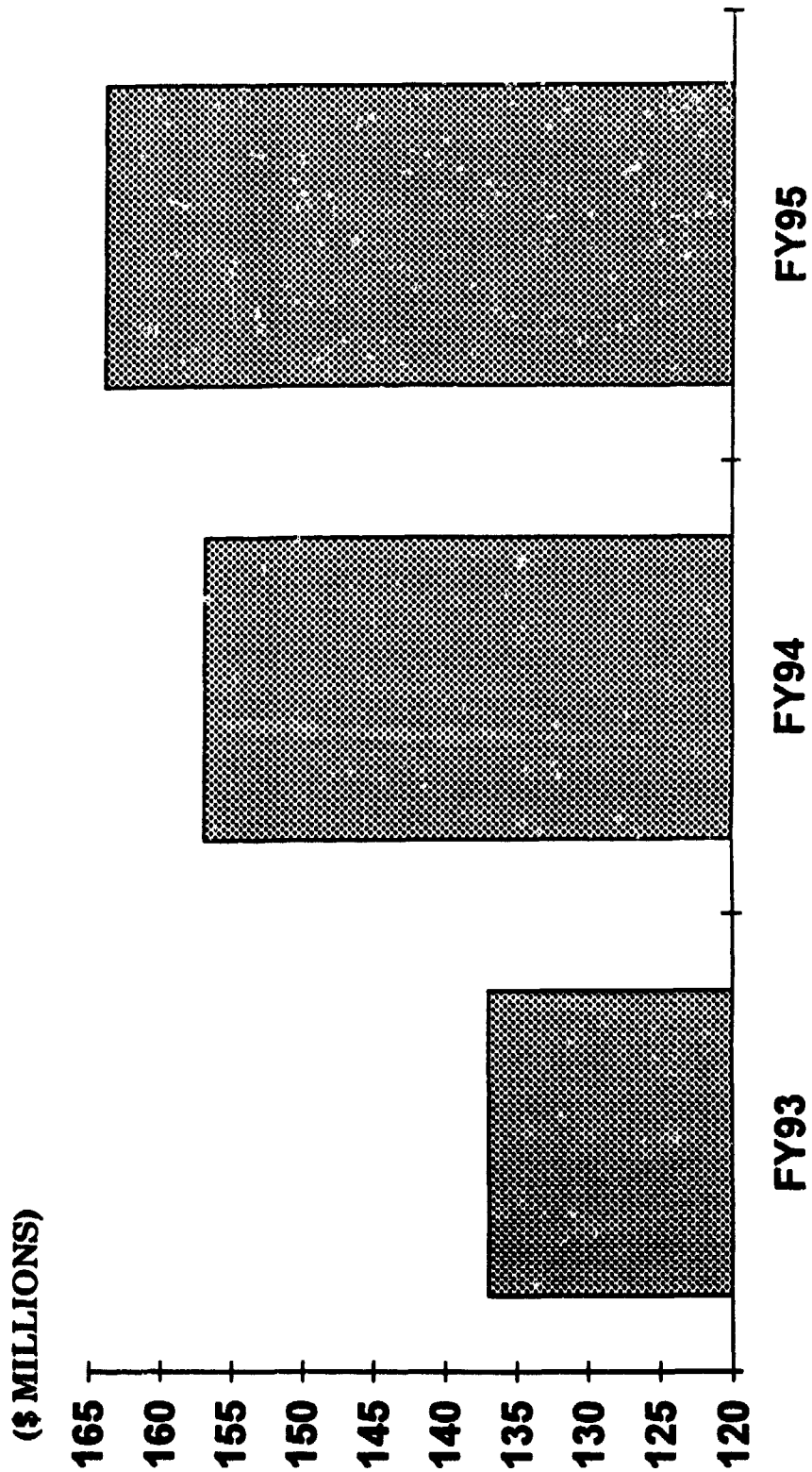
**Prevent future pollution by reducing use of hazardous materials and releases of pollutants into the environment to as near zero as feasible.**

- Reduce use of hazardous materials in new weapon systems
- Reduce hazardous material use /waste generation at installations
- Reduce hazardous materials in existing weapon systems
- Acquire and crossfeed pollution prevention technologies
- Apply new technologies to pollution prevention
- Establish investment strategy to fund the program

**POLLUTION PREVENTION  
TODAY'S INFLUENCES**

- Skyrocketing handling/disposal costs for hazardous wastes
- NASA finds ozone hole is bigger than formerly estimated
- Municipal solid waste landfills disappearing
- Bhopal, India incident and hazardous material use reporting

**Pollution Prevention  
FUNDING**



## **Pollution Prevention ISSUES**

- **Executive Order 12856**
  - EPCRA/TRI
  - Pollution Prevention Milestones
- **Hazardous Material Pharmacy**
  - Implementation AF-wide
  - Will help with TRI reporting requirements
- **Recycling - EO 12873**
- **Ozone Depleting Chemicals**
  - Halon production stopped
  - Freons in 1996
- **"Cool/Green" Communities**



## **POLLUTION PREVENTION- KEY ACTION PLAN-GOALS**

- **Hazardous Materials - Purchases**
  - Ozone Depleting Chemicals (ODCs)
    - » Used as: solvents, refrigerants, firefighting agents
    - » GOAL: *Stop procuring ODCs by April 1994*
  - 17 Most Toxic Chemicals
    - » Examples: Trichloroethylene (TCE), Cadmium/Nickel, Chromium and Lead
    - » GOAL: *Reduce purchases of EPA 17 Toxics 50% by 1996*
- **Hazardous Waste - Disposal**
  - Goal: *Reduce hazardous waste disposal 25% by 1996 and 50% by 1999*
- **Municipal Solid Waste(Trash) - Disposal**
  - Goal: *Reduce disposal 30% by 1996 and 50% by 1997*

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**VALUE ADDED  
PHARMACY CONCEPT**

- **CENTRAL POINT MONITORING ALL  
CHEMICALS ENTERING, ON AND  
LEAVING BASE**
  - Reduce amount of hazardous waste
    - » eliminates or reduces disposal costs
  - Less handling and storage reduces exposure to fines and penalties
- **CENTRAL BASE LOCATION FOR  
COMPLIANCE WITH "UNIQUE" STATE  
AND LOCAL CODES**

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**HAZARDOUS MATERIAL  
"PHARMACY CONCEPT"**

- Control the Amount Issued
- Overall Functions
  - Identify and Maintain
  - Validate, Order, Receive, Store, Issue, Track, Report
  - Minimize and Dispose ALL chemicals
- ALL Chemicals: hazardous, toxic, EPA 17, ODCs
- Key Players: SG, CE, LG, SE and Contractors
- Regulatory Functions occur after chemical dispensed
- Pharmacy **MUST** be managed by Stakeholder, e.g., base commander

# CONSERVATION

## Protect and Enhance Natural And Cultural Resources

- Wetlands
- Historic Sites
- 
- Endangered Species
- Critical Habitats

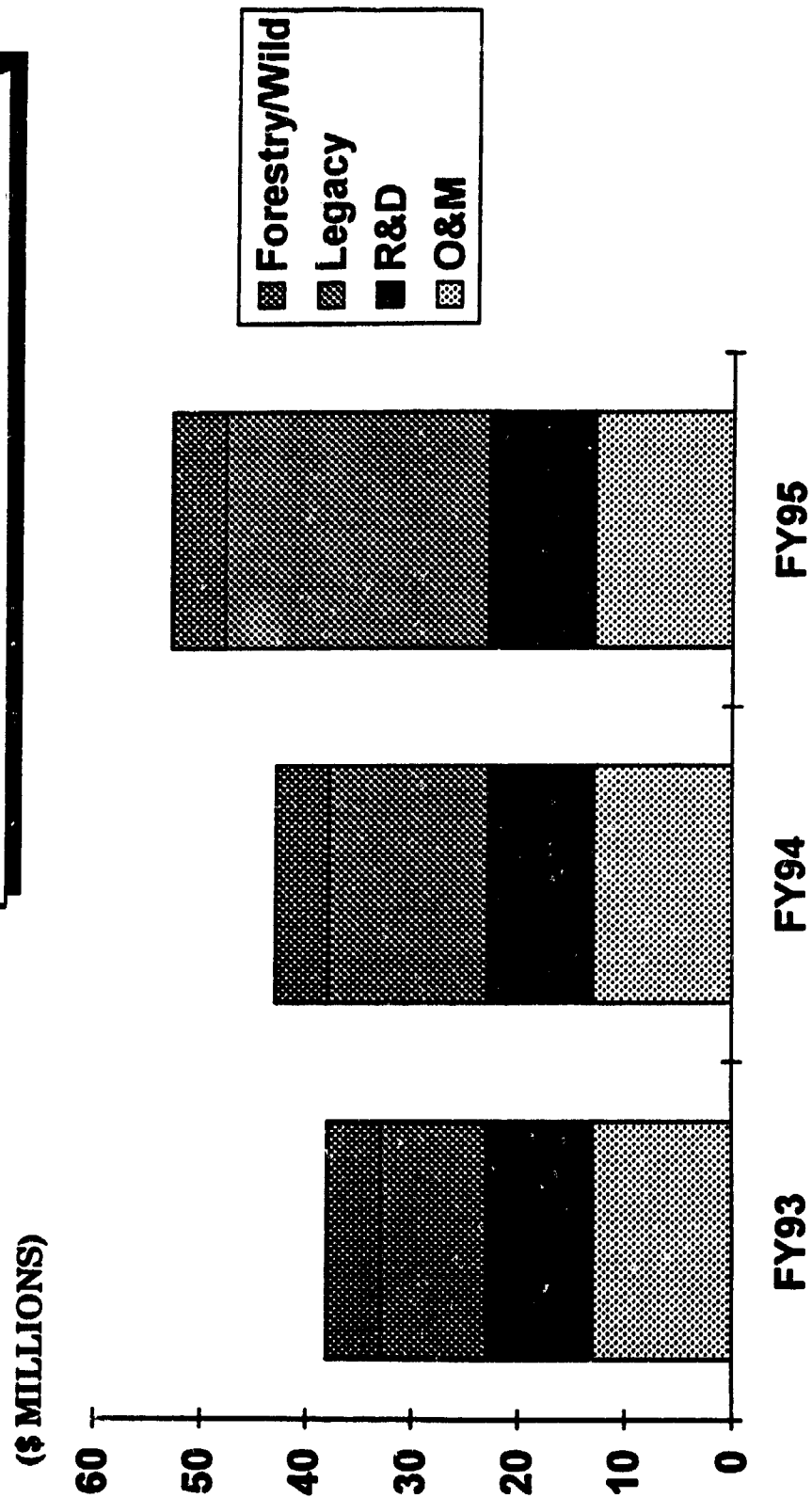
**CONSERVATION -  
TODAY'S INFLUENCES**

- Public involvement in planning/decision process
- Public concern over sensitive resources
  - Wetlands
  - Historic Properties
  - Endangered species
  - Native American sites

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# CONSERVATION FUNDING



## CONSERVATION ISSUES

- Base Comprehensive Plan
- Inventory and Mapping Requirements
- Legacy Program

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## CONSERVATION - GOAL

Protect and enhance our natural and cultural resources including wetlands, historic sites and endangered species through sound stewardship, management and use of environmental impact analysis process.



## CONSERVATION - PERFORMANCE

- USAF recognized as the best Federal agency at incorporating environmental considerations into the decision making process
- USAF installations received the DoD Natural Resources Conservation Award 6 times in the last 10 years

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## **AIR FORCE RANGES - NATIONAL ASSETS**

- Ranges provide areas for sharpening military skills and maintaining readiness
- Ranges protect irreplaceable wetlands, cultural resources, and threatened and endangered species
- Ranges provide opportunities for a variety of outdoor recreation

## RANGES - SCOPE

- USAF ranges include over 7 million acres
  - Over 60% + available for dual use by military and public
- 62 Full-time environmental professionals
- Significant resources invested

- Range operations \$51.2 Million
- Environmental stewardship: \$26.4 Million

TOTAL \$77.6 million (FY93)

**USAF RANGES -  
MILITARY MISSIONS**

- Air Force & other Military Services Flying Training
- Weapons testing
- Air-to-ground Bombing
- Operational Testing of Aircraft and Missiles
- Air Combat Training
- Joint Military Exercises

**USAF RANGES -  
NATURAL RESOURCE USES**

- **Agriculture: over 150,000 acres leased**
  - **Forestry: over 500,000 acres managed for**
    - Wildlife habitat
    - Nature Trails
    - Timber harvest
  - **Outdoor Recreation: 20,000+ permits annually**
    - hunting, fishing, camping and pinicking
- Education: wilderness areas offer opportunities for field trips and postgraduate research**

**USAF RANGES -  
Operating Style**

- Protect and enhance natural and cultural resources on USAF Ranges
- Work in full partnership with other agencies and the public:
  - Assess environmental impacts of proposed actions
    - » public hearings
  - Cooperative agreements with The Nature Conservancy, the National Trust for Historic Preservation, and the U.S. Fish and Wildlife Service
  - Encourage public participation
    - » Meet periodically with the public to address concerns

**USAF Ranges  
Operating Style (Cont'D)**

- **Mitigate potential environmental impacts to the best of our ability**
  - Positioned targets to avoid disturbing Red-cockaded Woodpeckers at four ranges in the southeast
  - Fenced Desert Tortoise habitat at Nellis Range to prevent intrusion by humans
  - Curtailed Delta Launches at Vandenburg AFB during Least Turn nesting season
  - Modified flying routes and altitude near Peregrine Falcon nests in Alaska
  - Adjusted lights on Cape Canaveral launch pads to protect sea turtle nests and newly hatched turtles
- **We are not just gate keepers - We protect and restore sensitive resources**

## **USAF Ranges Wetlands**

- Wetlands are important for filtering pollutants, recharging groundwater, reducing flood damage, providing habitat for wildlife, and other benefits
- We are protecting more than 100,000 acres of wetlands on USAF ranges
  - Dare County Range, North Carolina, is restoring 5,000 acres of wetlands by installing water control structures under roads built prior to USAF ownership



**USAF RANGES  
CULTURAL RESOURCES**

- Over 30,000 archeological sites on Air Force Ranges
- Inventoring all range lands to precisely locate archeological sites - satellite imagery is being used as an inventory tool
- Working with Native Americans to protect burial sites and other sacred areas on Air Forces Ranges
  - Vandenberg AFB signed agreement with the Chumash Indians

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**USAF RANGES  
THREATENED AND  
ENDANGERED SPECIES**

- **USAF Ranges are some of the few areas in the world for certain species to exist - the following species are protected and thrive on our ranges:**

- Sonoran Pronghorn Antelope
- Desert Tortoise
- Lesser Long-nosed Bat
- Curtis Sand Grass
- Tidewater Goby
- Piping Plover
- Ebony Spleenwart

**PLUS OVER 50 ADDITIONAL PLANT AND ANIMAL SPECIES**

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**USAF RANGES  
THREATENED AND  
ENDANGERED SPECIES**

- Working with Fish and Wildlife Service to reestablish the endangered Red Wolf at Dare County Range, North Carolina
- Goldwater Range - Joint effort with FWS to reestablish the Desert Bighorn Sheep
  - Healthy populations are a source for establishing herds elsewhere
- Stewardship of Nellis Range has sustained high populations of Merriam Bearpaw Poppy
  - so numerous that species may be removed from consideration as an endangered species

**USAF RANGES  
PUBLIC CONCERNS**

- **Concerns often mentioned at public meetings**
  - **Fires from munitions and flares damage the landscape and produce air pollutants**
  - **Noise from aircraft disturbs people and wildlife**
  - **Spent munitions and unexploded ordnance contaminate the ranges and creat hazardous conditions**
  - **Chaff causes problems if ingested by cattle or wildlife**
  - **Lasers can harm people and wildlife in and around ranges**

## LEGISLATIVE ISSUES

### • PROPOSED LEGISLATION COULD NEGATIVELY AFFECT THE WAY WE TRAIN BY RESTRICTING AIRSPACE USE

- National Wildlife Refuge Administration Act would require compatability determination for on ground activities and may restrict use of airspace
- California Desert Protection Act - Senate veriosn (S.21) gives military use protection needed to continue
- Regulation of Air Space Over Park System Lands in Hawaii would establish minimum flight altitude over Park lands in Hawaii - would set a precedent for legislating airspace uses rather than going with established FAA procedures
- Attempt in last Congress to freeze all Air National Guard airspace actions

**USAF RANGES  
GAO FINDINGS**

- GAO Report due out soon contains good and bad news
  - Goldwater Range, Arizona has:
    - » "the most cooperative relationship between the military and BLM"
    - » "a partnership in the desert" with BLM
  - At Nellis Range, Nevada, the Air Force:
    - » "was generally uncooperative" in dealing with the USFWS
    - » "Conducted air-to-ground bombing outside of approved areas"
    - » "left tank targets on the refuge that were contaminated by depleted uranium"
  - Nellis Range is aggressively pursuing corrective action

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**USAF RANGES  
AWARD WINNERS**

- The Air Force is proud of its environmental stewardship record;
  - In 1993, the President's Council on Environmental Quality cited the Air Force for having the best environmental planning program in the Federal Government
  - Nellis AFB and Range voted best Federal facility environmental program in EPA Regions 9 and 10 in 1993
  - Eglin AFB recognized by The Nature Conservancy for exceptional ecosystem management in 1993
  - Eglin AFB won 1993 DoD Natural Resources Award

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## **USAF RANGES BOTTOM LINE**

- Protection and enhancement of endangered species, wetlands, and cultural resources are fully integrated with the mission of our ranges
- Control of activities on our landholdings have "saved" a large portion of our ranges from human development and exploitation, preserving unique natural and cultural resources that otherwise may have been destroyed



## USAF RANGES

- "The mission of the Department of Defense is more than aircraft, guns and missiles. Part of the defense job is protecting the land, waters, timber and wildlife - the priceless natural resources that make this great nation of ours worth defending.

Gen Thomas D. White  
AFChief of Staff, 1957-1961

## **NEPA/ ACQUISITION**

- **NEPA - All major Federal actions must be assessed for environmental impacts**
- **Environmental Impact Analysis Process**
  - **CATEX - Categorical Exclusion list**
  - **Environmental Assessment leads to FONSI of EIS**
  - **Environmental Impact Statement leads to ROD**
- **NEPA and the Acquisition Process**
  - **Current guidance in DoDI 5000.2**
  - **DoDI 6000.1**
  - **AFPD 32-70 and AFI 32-7061**
- **Environmental/Acquisition Working Group to address this issue**

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## NEPA/ ACQUISITION

- Working Group includes all services and DoD environmental and acquisition folks
- The acquisition process does not fit well with NEPA
  - Complicated process
  - Multi decision points
  - Impacts need to be considered at all points

# NEPA/ ACQUISITION

- **Air Force position**
  - DoD guidance needs to be general, recognizing that not all acquisition actions fit same mold
  - We need to use the NEPA process rather than develop a parallel and redundant process
  - Services need to publish specific procedural guidance
  - The Program manager is the proper responsible person
- **NEPA can be a very powerful tool to reduce costs when used at the right time(s) in the process**
- **We are working at determining when that is**

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## AIR FORCE ENVIRONMENT

*"We're not doing this just because the law requires it - we're doing it because it's the right thing to do."*

General Merrill A. McPeak  
Chief of Staff, USAF  
20 April, 1992

**V. DEFENSE ACQUISITION WORKFORCE IMPROVEMENT—  
T&E EDUCATION, THE ENVIRONMENTAL COMPONENT**

**Mr. Irv Boyles, ODT&E(TFR), and  
Mr. Bob Bennett, NWAC**

**MRTFB**

**Environmental Workshop**

**April 26, 1994**



## **MRTFB ENVIRONMENTAL WORKSHOP OUTLINE**

---

- DAWIA Background
- T&E Competencies
- Training and Experience Requirements
- DAU Training Courses
  - Core Courses, ACQ 101 and ACQ 201
  - T&E Courses, TST 101, TST 202 & TST 301
- Summary





## **MRTFB ENVIRONMENTAL WORKSHOP**

### **DAWIA BACKGROUND**

- The Defense Acquisition Workforce Improvement Act (DAWIA) was enacted by Public Law 101-510, the National Defense Authorization Act of Fiscal Year 1991
- The Act requires the Secretary of Defense, acting through the Under Secretary of Defense (Acquisition) (USD(A)), to establish education and training standards, requirements, and courses for the civilian and military workforce
- DoD Implementation:
  - DoD 5000.52 - Implementing policy
  - DoDI 5000.58 and DOD 5000.52-M - Implementing Procedures



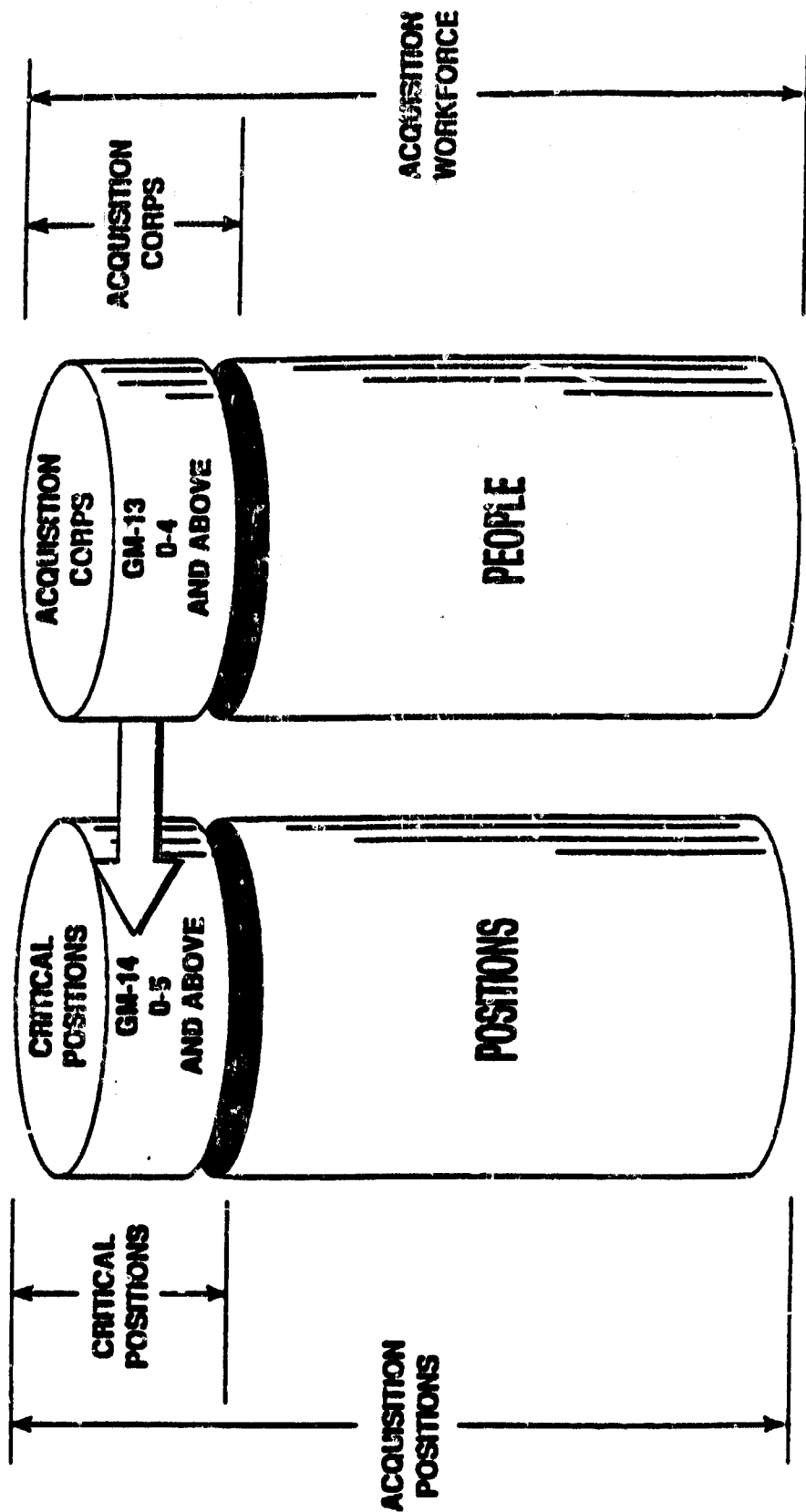
## **MRTFB ENVIRONMENTAL WORKSHOP THE CONCEPT**

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- **PEOPLE - Acquisition Workforce**
- **JOBS - Acquisition Billets**



## BILLETS / PEOPLE

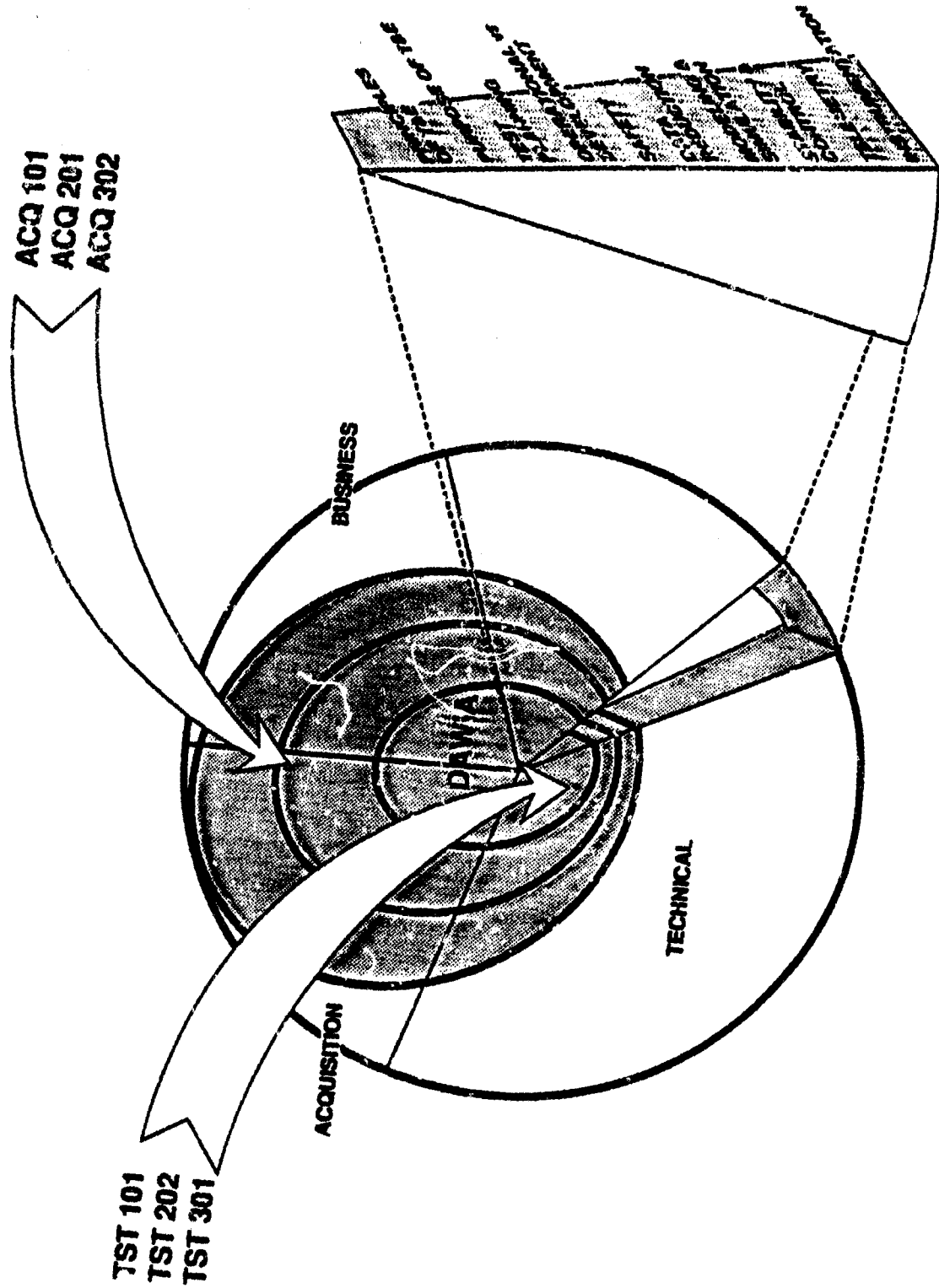




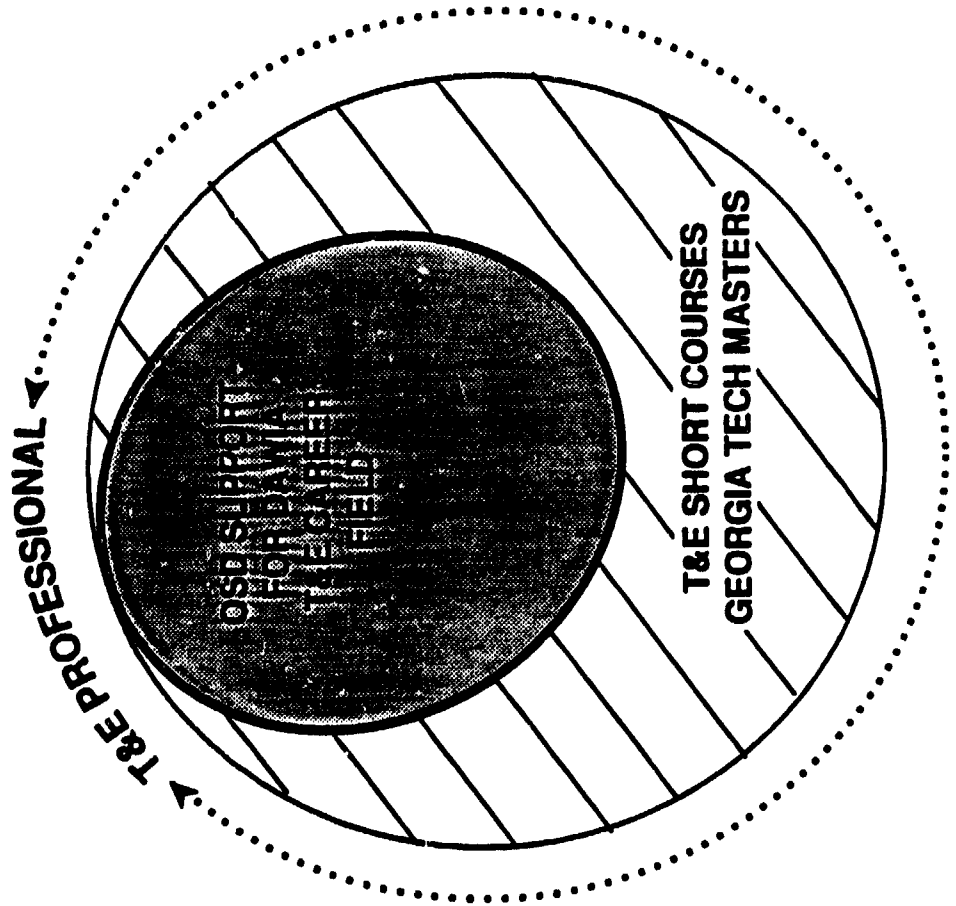
## **MRTFB ENVIRONMENTAL WORKSHOP T&E COMPETENCIES**

- Covering Eight (8) Knowledge and Skill Areas:
  - System Acquisition Process
  - Role of T&E in Systems Acquisition Process
  - Test and Evaluation Design
  - Resource Management
  - Data Collection and Validation
  - Analysis
  - Evaluation
  - Reporting

# COMPETENCIES REQUIRED FOR TEST & EVALUATION CAREER FIELD



# DTEPI ROLE FOR T&E PROFESSIONAL





# **MRTFB ENVIRONMENTAL WORKSHOP** **TRAINING AND EXPERIENCE REQUIREMENTS**

	Level I	Level II	Level III
Training	<p>ACQ 101 - Basic Course in Systems Acquisition Management</p> <p>TST 101 - Basic Course in Acquisition Test &amp; Evaluation</p>	<p>ACQ 201 - Intermediate Course in Acquisition Management</p> <p>TST 202 - Intermediate Course in Test &amp; Evaluation</p>	<p>ACQ 302 - Advanced Course in Acquisition Management</p> <p>TST 301 - Advanced Course in Test &amp; Evaluation</p>
Experience	One year acquisition experience	Two years of technical or engineering experience. One year of acquisition experience. One year of test and evaluation experience	Four years of technical or engineering experience. Two years of acquisition experience. Two years of test and evaluation experience

Ref: DoD 5000.52-M revised



## **MRTFB ENVIRONMENTAL WORKSHOP**

### **DAU CORE COURSES**

- ACQ 101 to provide introductory information on:
  - Environmental Regulations
  - Responsibilities and Enforcement
  - Environmental Trends in DoD
  
- ACQ 201 to cover management issues related to:
  - Environmental Regulations
  - Responsibilities and Enforcement





## **MRTFB ENVIRONMENTAL WORKSHOP DAU T&E COURSES**

---

- **TST 101**

- Environmental Legislation related to MRTFB
- Environmental Policy Initiatives
- Contractor Test Issues

- **TST 202 and TST 301**

- Environmental Impact on Testing



## **MRTFB ENVIRONMENTAL WORKSHOP**

### **SUMMARY**

- Environmental Training is an Integral Part of the DAU Courses in Systems Acquisition Management and in T&E
- Core Courses Cover Regulations, Enforcement, Trends, Responsibilities and Management Issues
- T&E Courses Cover Areas for the Tester

# TST202 LEVEL II COURSE SCHEDULE

REVISION 1

WEEK: ONE

22-Mar-94  
(SCHD2021)

	1 0810-0900	2 0910-1000	3 1010-1100	4 1110-1200	5 1210-1300	6 1310-1400	7 1410-1500	8 1510-1600	9 1610-1700
MON		I. INTRO NWAC	>>>>>	II. ROLE T&E NWAC		>>>>>	IIIa. RQMT NPS	ANALYSIS	
TUE		IIIa. RQMT NPS	ANALYSIS	>>>>>		IIIb. TEST NPS	FLANNING	>>>>>	
WED		IIIb. TEST NPS	FLANNING	(CONT)		IIIa. RAM NWAC	>>>>>	>>>>>	
THUR		IIIc. TEST NWAC	CONDUCT	>>>>>		IIIc. TEST CONDUCT NWAC	IIId. M&S NPS	>>>>>	
FRI		IV. RESOURCE NWAC	>>>>>	>>>>>		V. DATA NWAC	COLLECT	>>>>>	

WEEK: TWO

	1 0810-0900	2 0910-1000	3 1010-1100	4 1110-1200	5 1210-1300	6 1310-1400	7 1410-1500	8 1510-1600	9 1610-1700
MON		V. DATA NWAC	COLLECT	>>>>>		VI. ANALYSIS NPS	>>>>>	>>>>>	
TUE		VI. ANALYSIS NPS	(CONT)	>>>>>		VII. EVALUATIO NPS	>>>>>	>>>>>	
WED		VIII. REPORTING NPS	>>>>> NWAC	IX. SOFTWARE NWAC		IX. SOFTWARE NWAC	>>>>>	X. INT. EXER INTRO NPS	
THUR		X. INTEGRATIVE NPS	EXERCISE	>>>>>		X. INTEGRATIVE NPS	EXERCISE	>>>>>	
FRI		X. INTEGRATIVE PRESENTATIO	EXERCISE	>>>>>					

Competencies: 27, 66, 68

**TEST CONDUCT  
LIVE FIRE TESTING**

- 27 Explain managing T&E risk including minimizing test resources**
- 27.1 Assess Risk trade-offs (tax 4)**
- 27.2 Determine allocations of resources to accomodate risk (tax 4)**
- 27.3 Utilize statistics analysis to evaluate risk (tax 4)**
- 27.4 Describe benifits of early identification of risk (tax 4)**
- 66 Review Live Fire testing requirements**
- 66.1 Develop live fire test strategy and plan, as required (tax 4)**
- 68 Recognize Environmental (EPA) requirements**
- 68.1 assess impact of EPA requirements on Testing and test planning (tax 4)**

School: NWAD

Title: Test Conduct, Environmental Impact  
Risk Management, Live Fire Testing

Day/Week: Thur/Week 1

Hours: (0910-1100)

Type of instruction & Methodology: Informal Lecture/conference, Exercise: Assessment of risk trade offs, class exercise 30 min.

Instructional Aids: VuGraph, Chalkboard

Objectives and Scope: 1) To provide an Introduction to Environmental impact analysis, and National Environmental Policy Act (NEPA) requirements.

- EPA requirements
- Conduct of Environmental assessments (NEPA)
- Impact of environmental considerations on testing and test planning
- Locality considerations
- MRTFB Environmental office involvement

2) Discuss Risk Management of a typical T&E Acquisition. Using lessons learned information illustrate the value added of utilizing Risk

Assessment.

- The following T&E risk management Areas will be presented:
- Managing T&E risk
- assessing tradeoffs
- Allocations of resources to accomodate risk
- Evolution of risk
- Impact/Benefit of early identification of risk

3) To provide the student with information on the Types of Live Fire Test, to include Air, Surface, subsurface launched weapons. The role of live firing in T&E.

Discuss  
planning  
Give

- Discuss telemetry, targets, and coordination, examples of tests, various players involved and their responsibilities. Stages of initial through final reports and decisions. Discuss impact of test results, examples of such impacts.

Desired Learning Outcomes: After the completion of the presentation and student study assignment the student should be able to 1) identify the sources of information needed to perform an environmental analysis, 2) will be able to analyze Test plans to identify areas of risk in the life cycle, 3) determine if the live fire testing in a program is appropriate.

Reading Assignment/Homework: Read CEQA article by Bass & Herson

ESPT: 1 hour

Developer References: Majumdar, Somendu B. 1993. "Regulatory Requirements for Hazardous Waste", McGraw Hill; What California Environmental Quality Act (CEQA) of 1970 Practitioners must know about National Environmental Policy act (NEPA); Current articles; MRTFB office policy & procedures

Closure: Recapitulation of critical topics and call for questions  
Recap/Q&A/QUIZ

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# ENVIRONMENTAL IMPACT

## Current Federal Requirements

NEPA

CLEAN AIR ACT

TOXIC SUBSTANCE CONTROL ACT

## Environmental Analysis

DoD 5000.2-M REQUIREMENTS OVERVIEW

INTRGRADED PROGRAM SUMMARY

## Test & Evaluation Master Plan

Considerations

Risk Identification/Mitigation planning

Public Interest Groups



# ENERGY AND ENVIRONMENTAL UPDATE



A Publication of the Energy and Environmental Quality Division  
American Society for Quality Control

Jan / Feb / Mar 1994  
Volume 14, Number 1

## GRADED APPROACH TO IMPLEMENTING QUALITY ASSURANCE IN THE NUCLEAR INDUSTRY

*William L. Fauth, GTS Duratek  
and  
Walter Andrews, Tennessee Valley Authority*

In January of this year, members of the Nuclear Facilities Committee of the Energy and Environmental Division held their annual meeting with representatives from the Nuclear Regulatory Commission (NRC) and the Department of Energy (DOE) to discuss current issues. Also, for the first time the Committee met with representatives of the Nuclear Management and Resource Council (NUMARC). Meetings of this type have been sponsored by the Committee for the past eight years and have provided an excellent opportunity for industry Quality professionals and regulatory agencies to openly discuss items of mutual interest.

*"The benefits to be gained from a graded  
quality assurance program are  
significant for the nuclear industry."*

Numerous interesting subjects were discussed during these meetings, including the consolidation of NUMARC with the United States Council for Energy Resources (USCEA), the American Nuclear Energy Council (ANEC), and parts of the Edison Electric Institute (EEI). These organizations are being combined, effective March 16, 1994, to form the Nuclear Energy Institute. More information on this organization and their goals and objectives will become available at a later date.

In addition to this item of interest, members of the Committee were told that the NRC and NUMARC consider "the benefits to be gained from a graded quality assurance program to be significant and extremely important to the industry." The application of

See **GRADED APPROACH** Page 3

## Inside . . .

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- ☐ 1994 Division Award  
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## E&EQ DIVISION'S QA GUIDELINES DOCUMENT PUBLISHED

We have received word from Quality Press that the *Quality Assurance Guidelines for Research and Development*, authored by the Basic and Applied Research Committee, will be the first document published under their new "Briefings" area. Congratulations to George Roberts and all members of that committee who worked so long and so hard to make this a reality. Copies will be available April 15, 1994.

## Environmentalists Sue to Block Navy Tests of Destroyer Hulls

By J.E. MITCHELL  
SPECIAL TO THE TIMES

VENTURA—Five environmental groups sued the Navy on Tuesday, saying a proposal to test ship hull strength by detonating underwater explosives southwest of the Channel Islands could harm marine life in the area.

After weeks of fruitless negotiations with the Navy, the groups filed suit in U.S. District Court in Los Angeles, seeking a preliminary injunction to halt the testing, which is scheduled to start later this month.

Navy officials acknowledge that the testing may result in the deaths of a small number of marine mammals, but insist that the testing is environmentally safe.

The tests involve the detonation of underwater explosives as large as 10,000 pounds to determine how well the Navy's new Aegis-class destroyers, their electronic equipment and their crews would hold up under battle conditions.

At the crux of the dispute is proposed the location of the testing, an area roughly 20 miles south of Navy-owned San Nicolas Island and about 85 miles southwest of the Point Mugu Naval Air Weapons Station, where the tests will be monitored.

"The Navy could scarcely have chosen a richer marine environment in which to test its ships," said Joel Reynolds, senior attorney with the Natural Resources Defense Council, which is coordinating the legal challenge with the other environmental groups. "Detonating heavy explosives near the Channel Islands National Marine Sanctuary makes as much sense as testing dynamite in the Sistine Chapel."

Along with the Natural Resources Defense Council, the Humane Society of the United States, Save the Whales, the American Oceans Campaign and Santa Monica-based Heal the Bay jointly filed the lawsuit.

Navy officials, who say their aerial surveys show there are relatively few marine mammals in the area, expressed disappointment over the decision of the groups to file a lawsuit.

"We feel that we have gone to extraordinary lengths to gather the scientific data showing this area is the best-suited for the tests," said Lt. Cmdr. Frank Thorp, a Navy spokesman.

But the environmental groups say the area is teeming with marine life, including some on the federal list of endangered species.

4/13/94 L.A. Times



**VI. POLLUTION PREVENTION PANEL**

**PANEL OVERVIEW**  
**Mr. Tom Metz, NAWC-22**



# **MRTFB ENVIRONMENTAL WORKSHOP**

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## **POLLUTION PREVENTION PANEL**

**April 26, 1994**

NAWC-22

1



## ***Session Outline***

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- ***Goals***
- ***Panel Topics***
- ***Expectations***



## ***Workshop Goals***

- ***Tester/Environmentalist Teamwork***
- ***Promote Understanding***
- ***Information Sharing***



## **Panel Topics**

- **Executive Order 12856**  
*Mr Dick Kebler, DUSD(E)*
- **Ozone Depleting Substances**  
*Mr James O'Bryon, DT&E(L&MP)*
- **Pollution Prevention**  
*Ms N. Teresa Hoagland, EPA (Risk Reduction Group)*
- **Current Initiatives**  
*Major Travis (TECOM), Lcdr Payne (NAVSUP)*



## ***Expectations***

- ***MRTFB's/MECC***
  - ***Substance Categories***
  - ***Pollution Prevention Initiatives***
  - ***Available Technologies/Resources***
- ***Test Mission Requirements***

**ENVIRONMENTAL SECURITY—DEFENDING OUR FUTURE**  
**Mr. Dick Kebler, ODUSD(ES)**



**ENVIRONMENTAL SECURITY—DEFENDING OUR FUTURE**

**POLLUTION PREVENTION**

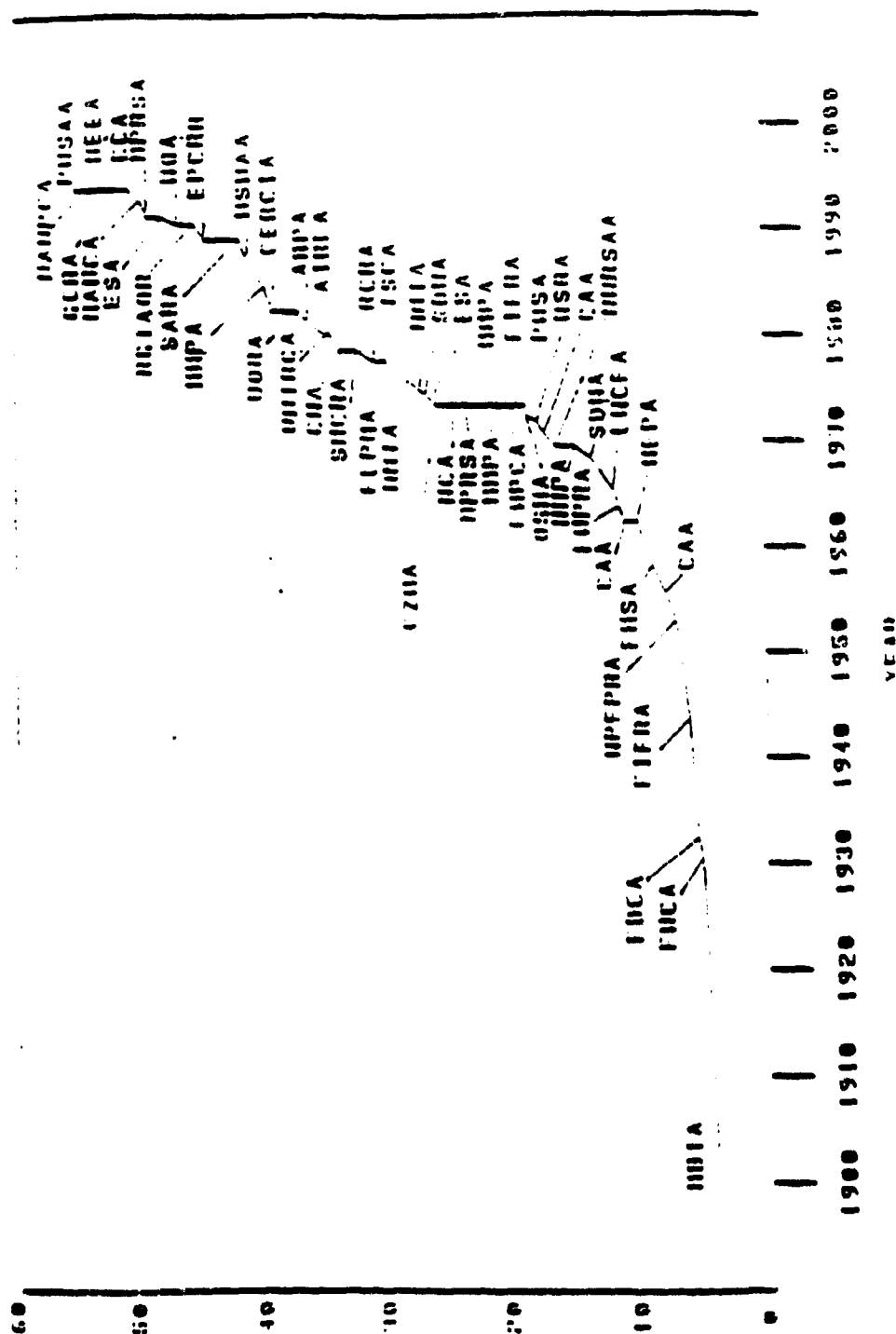
**Mr. Dick Kebler**  
**DUSD(ES)**

# **BACKGROUND**

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- **INCREASE IN ENVIRONMENTAL REGULATIONS**
  - REQUIRES LEADERSHIP TIME AND ATTENTION
  - RESTRICTING OPERATIONS AND LOGISTICS

# ENVIRONMENTAL LAWS



# **ENVIRONMENTAL RESPONSIBILITIES**

- **MANY NEW LAWS AND REGULATIONS  
PLACES RESPONSIBILITIES ON FEDERAL  
DECISION MAKER**
  - CAA AMENDMENTS CONFORMITY ISSUES
  - FEDERAL IMPLEMENTATION PLANS

# **ENVIRONMENTAL RISKS**

- COMPLIANCE
- CONTROL
- CLEAN-UP
- MATERIAL CONSTRAINTS
- OPERATIONAL AND LOGISTICS CONSTRAINTS

# **WHAT ARE SOME OF THE PROBLEMS?**

---

- **ENVIRONMENTAL OVERSIGHT IS NOT FULLY EFFECTIVE**
  - **INADEQUATE COMPLIANCE WITH THE REQUIREMENTS OF DoDI 5000.2**
  - **ENVIRONMENTAL DOCUMENTS ARE NOT ALWAYS PROVIDED TO SUPPORT CRITICAL DESIGN REVIEW**
- **ENVIRONMENTAL POLICIES ARE NOT CONSISTENTLY IMPLEMENTED**
  - **NEPA REQUIREMENTS; MANDATORY VS. OPTIONAL**

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# PROBLEMS

CONTINUED

---

- ENVIRONMENTAL CONSEQUENCES ARE NOT ALWAYS FACTORED INTO SYSTEM LIFE-CYCLE COST AND POTENTIAL ACQUISITION IMPACTS
  - NOT ALWAYS CONSIDERED
  - NOT ALWAYS INTEGRATED
  - END-PRODUCT FOCUS

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## **WHAT ARE SOME OF THE CAUSES?**

- **LACK OF ACTIVE ENVIRONMENTAL ASSESSMENT IN ACQUISITION PROGRAMS DURING DAB REVIEWS**
- **VARIABLE QUALITY OF ENVIRONMENTAL POLICY, GUIDANCE OR PROCEDURES**
  - **THROUGH ACQUISITION REGULATIONS**
  - **THROUGH OSD ENVIRONMENTAL DIRECTIVES**
  - **THROUGH MILITARY DEPARTMENT DIRECTIVES**

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# CAUSES

CONTINUED

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- **VARYING DEGREES OF PRIORITY**
  - FOCUS ON FACILITY MANAGEMENT VS. ACQUISITION PROCESS
  - FRONT-END FOCUS ON COST, SCHEDULE, PERFORMANCE; BACK-END FOCUS ON ENVIRONMENTAL CONSIDERATIONS

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# **ACQUISITION CONCERNS**

- **COST**

- ADDRESSING ENVIRONMENTAL REQUIREMENTS AFTER DESIGN
- QUICK FIXES DURING DEVELOPMENT

- **SCHEDULE**

- DELAY OR STOP PROGRAM

- **PERFORMANCE**

- BACKFITTING OF ODS FRIENDLY EQUIPMENTS

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**PREVENTION**

**PREVENTION**

**PREVENTION**

**PREVENTION**

**PREVENTION**

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# **VISION**

---

**REDUCE SYSTEM LIFE-CYCLE COSTS  
BY IMPROVING SYSTEM  
ENVIRONMENTAL PERFORMANCE  
AND REDUCING THE ENVIRONMENTAL  
RISKS**

## **PARTNERSHIP**

**CREATING A CLIMATE FOR  
SUCCESS IN THE DEPARTMENT  
OF DEFENSE BY INTEGRATING  
ENVIRONMENTAL SECURITY IN  
THE RESEARCH, DEVELOPMENT,  
ACQUISITION, PROCUREMENT  
AND LOGISTICS PROCESS.**

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**4/8/92**

**TECHNOLOGY PROGRAM FOR ALTERNATIVES TO OZONE-  
DEPLETING SUBSTANCES FOR WEAPON SYSTEMS USE**

**Mr. James O'Bryon, DT&E(L&MP)**

**TECHNOLOGY PROGRAM FOR ALTERNATIVES TO  
OZONE-DEPLETING SUBSTANCES (ODSs)  
FOR WEAPON SYSTEMS USE**



**MR. JAMES F. O'BRYON  
DEPUTY DIRECTOR, T&E/LAND & MARITIME PROGRAMS  
APRIL 26, 1994**

## AGENDA

- HALON ALTERNATIVES R&D STEERING GROUP (HASG)
  - BACKGROUND
  - ORGANIZATION
- TECHNOLOGY STRATEGY
  - SCOPE
  - SERVICE USES AND USAGE
  - GOAL
  - APPROACH
- TECHNOLOGY DEVELOPMENT PLAN
  - PLANNING PROGRESS
  - R&D FUNDING PROFILE
  - TECHNICAL PROGRESS/ACCOMPLISHMENTS/ALTERNATIVES
  - SUMMARY

HALON ALTERNATIVES R&D STEERING GROUP



**DoD DIRECTIVE 6050.9 REQUIRES THAT:**

- DDR&E "... SHALL COORDINATE R&D PROGRAMS, AS APPROPRIATE, ON ALTERNATIVE CHEMICALS OR TECHNOLOGIES FOR FIRE AND EXPLOSION SUPPRESSION AND, IF NECESSARY, OTHER CFCs"
- DoD COMPONENTS "... SHALL CONDUCT R&D TO IDENTIFY OR DEVELOP ALTERNATIVE PROCESSES, CHEMICALS, OR TECHNIQUES FOR FUNCTIONS CURRENTLY BEING MET BY CFCs AND HALONS"

## **HALON ALTERNATIVES R&D STEERING GROUP**

### **Background**

- FORMED BY ODDRE(R&AT/ET) ON SEPTEMBER 3, 1991
- RESPONDS TO DoD POLICY DIRECTIVE 6050.9
- ADDRESSES THE IMPACT OF
  - THE 1987 MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER,
  - TITLE 6 OF THE US CLEAN AIR ACT, 1990 AMENDMENT, AND
  - THE FEBRUARY 11, 1992 PRESIDENTIAL ANNOUNCEMENT THAT THE U.S. IS ACCELERATING ITS PHASEOUT OF ODS PRODUCTION TO 1995

### **ON DoD'S MISSION ACCOMPLISHMENT CAPABILITIES**

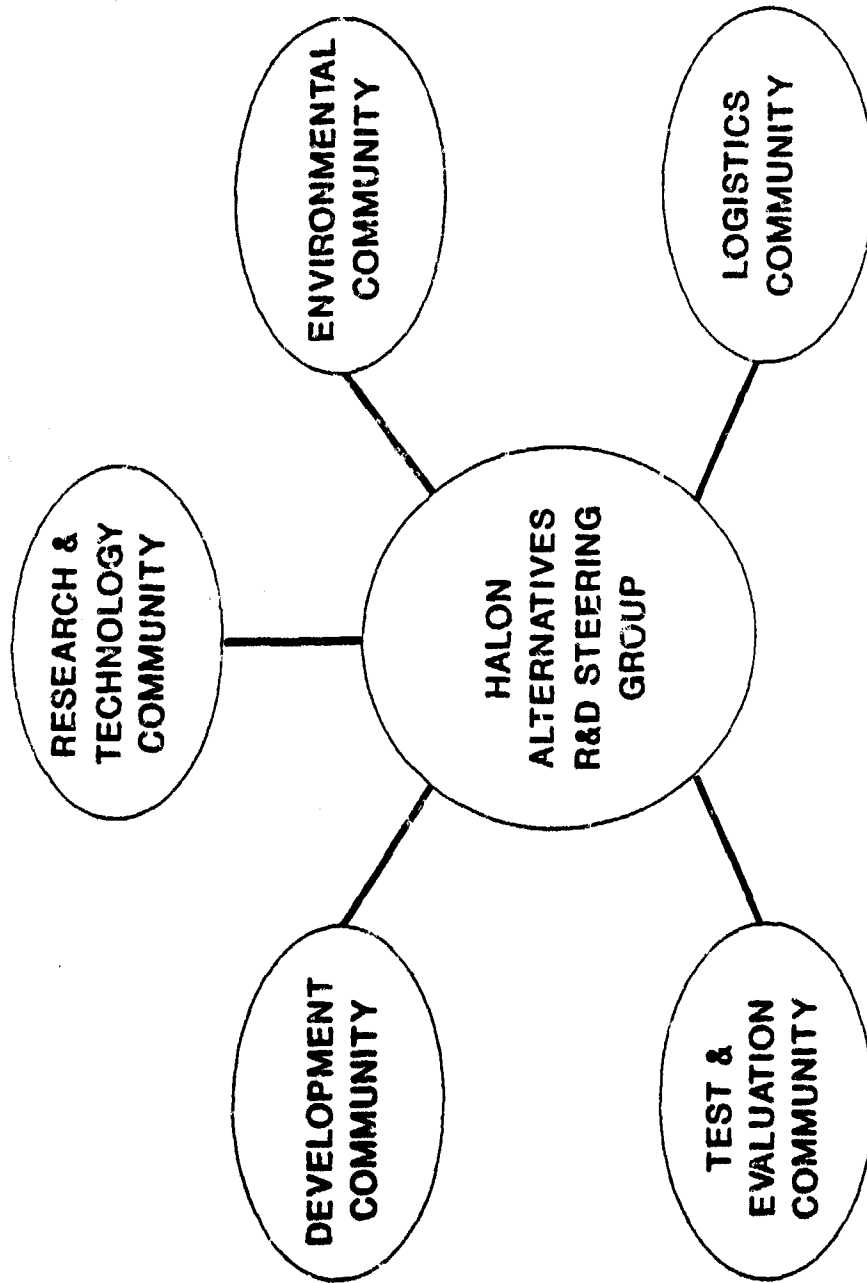
**HALON ALTERNATIVES R&D STEERING GROUP**

## NATIONAL IMPACT OF LEGISLATION

- ALL HALON PRODUCTION CEASED IN THE U.S. ON  
DECEMBER 31, 1993
- ALL OTHER ODS PRODUCTION (CFCs/1,1,1-TRICHLOROETHANE/  
CARBON TETRACHLORIDE) CEASES IN THE U.S. BY  
DECEMBER 31, 1995
- EPA REQUIRES:
  - ✓ REPLACEMENT SUBSTANCES TO HAVE AN OZONE-  
DEPLETING-POTENTIAL ( ODP) < 0.02 AND NO  
ADVERSE GLOBAL WARMING IMPACT
  - ✓ CLASS II SUBSTANCES (0.02 < ODP < 0.2) BE  
PHASED OUT OF PRODUCTION BY 2030

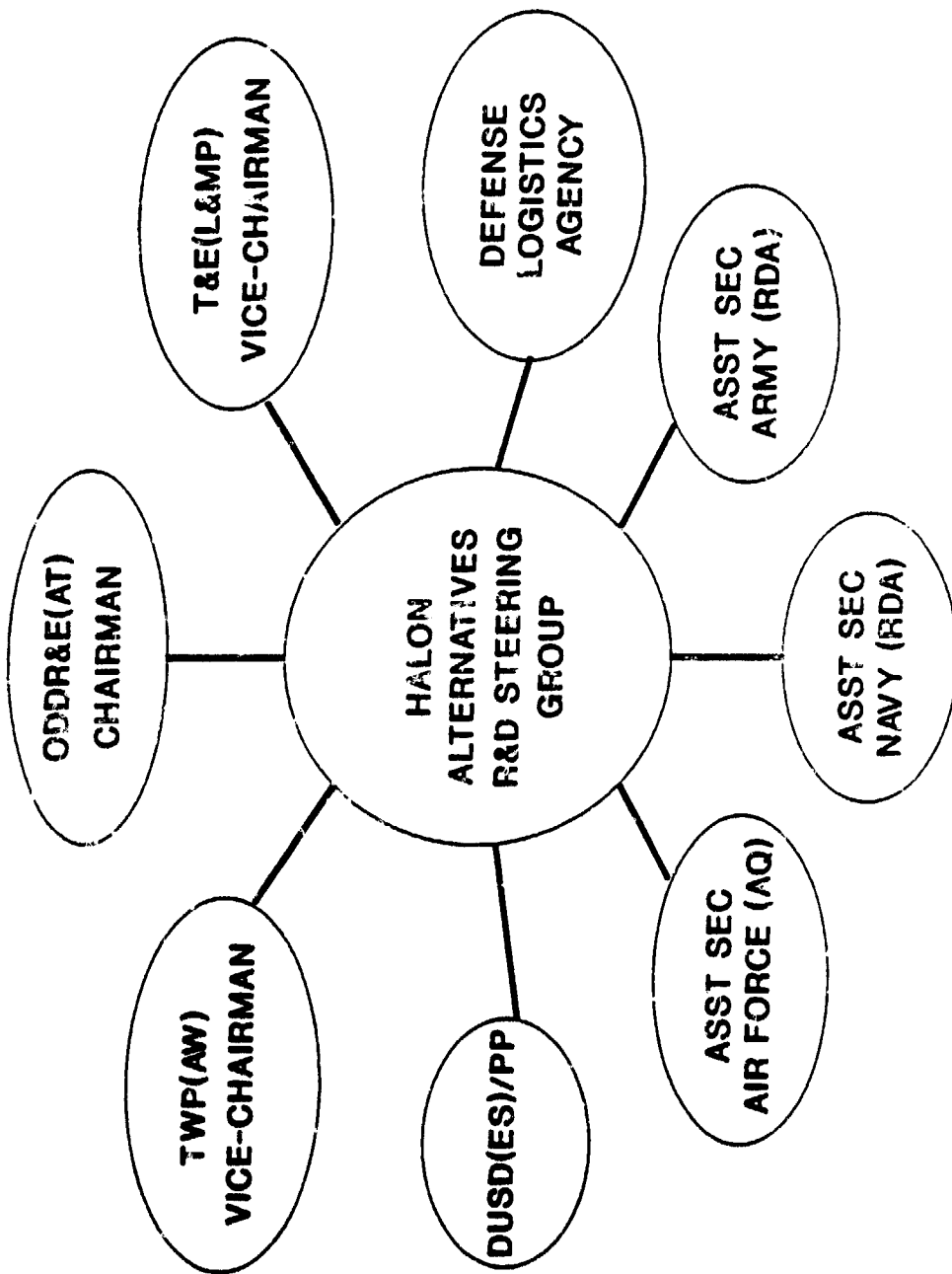
HALON ALTERNATIVES R&D STEERING GROUP

# HALON ALTERNATIVES R&D STEERING GROUP COMMUNITIES



HALON ALTERNATIVES R&D STEERING GROUP

# HALON ALTERNATIVES R&D STEERING GROUP REPRESENTATION



# ODS ALTERNATIVES TECHNOLOGY STRATEGY

## ODS ALTERNATIVES TECHNOLOGY STRATEGY

### Scope

- THE REQUIREMENT TO CEASE PRODUCTION AND ELIMINATE USE OF ODSs PRESENTS SIGNIFICANT PROBLEMS TO DoD, INCLUDING HOW TO:
  - (1) SHIFT FROM ODS-BASED EQUIPMENT AND PROCESSES
  - (2) CONSERVE EXISTING STOCKS OF THESE MATERIALS
  - (3) REDUCE EMISSIONS
  - (4) MANAGE SHRINKING RESERVES OF CFCs AND HALONS BY RECOVERING, RECYCLING, AND REALLOCATING THEM TO THEIR MOST CRITICAL USES
- THE STRATEGY ADDRESSES ONLY THE FIRST PROBLEM

HALON ALTERNATIVES R&D STEERING GROUP

## ODSs ARE USED EXTENSIVELY WITHIN DoD

### HALONS

- FIRE EXTINGUISHMENT IN MANNED SPACES (1211/1301)
- FIRE EXTINGUISHMENT IN UNMANNED SPACES (1211/1301)
- EXPLOSION SUPPRESSION IN MANNED SPACES (1301)
- EXPLOSION SUPPRESSION IN UNMANNED SPACES (1301)
- SOLID ROCKET MOTOR THRUST CONTROL (2402)

### CFCs

- REFRIGERATION AND COOLING (CFC-11, -12, -114, -115, R-500, AND R-502)
- GENERAL AND PRECISION CLEANING (CFC-113, CARBON TETRACHLORIDE, AND METHYL CHLOROFORM)

HALON ALTERNATIVES R&D STEERING GROUP



## SERVICE USES OF ODSs IN WEAPON SYSTEMS

PRODUCT	ARMY	NAVY	AIR FORCE
HALON 1011/1202 (FE)	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft</li> </ul>
HALON 1211 (FE)	<ul style="list-style-type: none"> <li>• Flightline transportables</li> </ul>	<ul style="list-style-type: none"> <li>• Portables (ships/shipyards/communication/computer facilities)</li> <li>• Aircraft carrier firefighting</li> <li>• Shore facility flightlines</li> <li>• Small landing craft</li> </ul>	<ul style="list-style-type: none"> <li>• Flightline transportables</li> <li>• Aircraft</li> <li>• Aircraft portables</li> <li>• Building portables</li> <li>• Hush houses</li> </ul>
HALON 1301	<ul style="list-style-type: none"> <li>• Aircraft hand held (FE)</li> <li>• Ground armored vehicles</li> <li>• Occupied spaces (ES)</li> <li>• Ground armored vehicle engine compartments (FE)</li> <li>• Maritime vessels (FE)</li> <li>• Hand held (Air/Ground/Maritime) (FE)</li> <li>• Communication shelters (FE)</li> </ul>	<ul style="list-style-type: none"> <li>• Shipboard (propulsion machinery/fammable liquid storerooms/fuel pump rooms/emergency generator rooms) (FE)</li> <li>• Aircraft (FE/ES)</li> <li>• Ground armored vehicles (ES)</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft (FE/ES)</li> <li>• Facilities (FE)</li> <li>• Hand helds (FE)</li> </ul>
HALON 2402 (RC)	<ul style="list-style-type: none"> <li>• SDI</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Minuteman</li> </ul>
CFC 11	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Refrigerants in ships/aircraft/shore facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft EC cooling</li> <li>• Rigid/flexible foams for crew compartments/buildings/systems</li> <li>• Electronic precision cleaning</li> </ul>
CFC 12	<ul style="list-style-type: none"> <li>• Refrigeration for photo lab/food service/medical lab/research lab</li> <li>• Air conditioners in tactical mobile shelters</li> </ul>	<ul style="list-style-type: none"> <li>• Refrigerants on ships/aircraft/shore facilities</li> <li>• Medical equipment sterilization</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft EC cooling</li> <li>• Metal cleaning</li> <li>• Electronic precision cleaning</li> </ul>
CFC 113	<ul style="list-style-type: none"> <li>• Metal cleaning</li> <li>• General solvent</li> </ul>	<ul style="list-style-type: none"> <li>• General solvent</li> <li>• Inertial guidance system production</li> <li>• Cleaning agent for electronics</li> </ul>	<ul style="list-style-type: none"> <li>• Inertial guidance system production</li> <li>• Electronic precision cleaning</li> <li>• Metal cleaning</li> <li>• Electronic plating</li> </ul>
CFC 114	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Refrigerant for ship and aircraft weapon systems</li> </ul>	<ul style="list-style-type: none"> <li>• Targeting/avionics cooling</li> </ul>
CFC 115	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Targeting/avionics cooling</li> </ul>
R-500	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft crew compartment cooling</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft crew compartment cooling</li> </ul>
R-502	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft crew compartment cooling</li> <li>• Metal cleaning</li> </ul>
Methyl Chloroform	<ul style="list-style-type: none"> <li>• General solvent</li> </ul>	<ul style="list-style-type: none"> <li>• General solvent</li> </ul>	<ul style="list-style-type: none"> <li>• Metal cleaning</li> <li>• Electronic precision cleaning</li> </ul>
Carbon Tetrachloride	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic precision cleaning</li> <li>• Metal cleaning</li> </ul>

FE - Fire Extinguishment

ES - Explosion

RC - Remote Control Thrust

## DoD USAGE OF ODSS

### SUMMARY OF DoD PROCUREMENT

	TOTAL US PRODUCTION (LBS) +	TOTAL DoD PROCUREMENT (LBS) +	DoD USAGE PERCENTAGE +
HALONS	77,711,000	10,325,000	13% (APPROX)
CFCS	411,411,000	14,588,000	4% (APPROX)
TOTAL ODSS	489,122,000	24,913,000	5% (APPROX)

+ PRODUCTION AND PROCUREMENT LEVELS BASED  
ON DUSD(ES) ESTIMATES FOR 1990

- ODS ELIMINATION IS A NATIONAL REQUIREMENT AND DoD HAS AN IMPORTANT INTEREST IN THE NATIONAL RESPONSE

HALON ALTERNATIVES R&D STEERING GROUP

## ODS ALTERNATIVES TECHNOLOGY STRATEGY

### Goal/What It Addresses

- GOAL: TO IDENTIFY AND/OR DEVELOP FEASIBLE ALTERNATIVES THAT WOULD ALLOW FOR THE ELIMINATION OF ODSs FROM ALL WEAPON SYSTEMS

### CRITERIA FOR FEASIBLE ALTERNATIVES:

- MINIMIZES THE NEGATIVE IMPACT ON WEAPON SYSTEM CAPABILITY RESULTING FROM VOLUME, WEIGHT, EFFECTIVENESS, ETC. IMPACTS
  - MINIMIZES THE ACQUISITION RESOURCES REQUIRED TO IMPLEMENT THE ALTERNATIVES
- THIS STRATEGY ADDRESSES CATEGORY 6.2 AND 6.3 TECHNOLOGY EFFORTS

HALON ALTERNATIVES R&D STEERING GROUP

## ODS ALTERNATIVES TECHNOLOGY STRATEGY

Goal/What It Doesn't Address

- THIS STRATEGY DOES NOT ADDRESS THE PROGRAMS THAT ARE ULTIMATELY REQUIRED TO INCORPORATE ALTERNATIVES INTO EXISTING AND NEW WEAPON SYSTEMS

THESE PROGRAMS ARE BEYOND THE SCOPE OF CATEGORY 6.2 AND 6.3 TECHNOLOGY EFFORTS

HALON ALTERNATIVES R&D STEERING GROUP

# **ODS ALTERNATIVES TECHNOLOGY STRATEGY**

## **Goal/Exit Criteria**

- **THE IDENTIFICATION AND/OR DEVELOPMENT  
PROCESS IS CONSIDERED COMPLETE WHEN THE  
GENERIC TECHNICAL KNOW-HOW EXISTS TO  
DESIGN ALTERNATIVE ODS-FREE SYSTEMS**

## **ODS ALTERNATIVES TECHNOLOGY STRATEGY**

### **Approach**

- **7 FOCUSED TECHNOLOGY EFFORTS TO IDENTIFY ALTERNATIVES FOR:**

- **FIRE EXTINGUISHMENT IN UNMANNED SPACES OF HELICOPTERS, FIXED WING AIRCRAFT, SHIPS, MARITIME CRAFT, GROUND ARMORED VEHICLES, AND PORTABLE APPLICATIONS BY FY1996, REPLACING HALON 1301 AND 1211**
- **EXPLOSION SUPPRESSION IN FIXED WING AIRCRAFT UNMANNED SPACES BY FY1996, REPLACING HALON 1301**
- **EXPLOSION SUPPRESSION IN MANNED SPACES OF GROUND ARMORED VEHICLES BY FY1996, REPLACING HALON 1301**

**HALON ALTERNATIVES R&D STEERING GROUP**

## ODS ALTERNATIVES TECHNOLOGY STRATEGY

### Approach

- FIRE EXTINGUISHMENT IN MANNED SPACES OF HELICOPTERS, FIXED WING AIRCRAFT, SHIPS, MARITIME CRAFT, GROUND ARMORED VEHICLES, AND DESIGNATED CRITICAL COMMAND AND CONTROL FACILITIES BY FY1996, REPLACING HALON 1301 AND 1211
- THRUST CONTROL IN BOOSTER ROCKETS BY FY2000, REPLACING HALON 2402

HALON ALTERNATIVES R&D STEERING GROUP

## ODS ALTERNATIVES TECHNOLOGY STRATEGY Approach

- COOLANTS AND REFRIGERANTS IN AIRCRAFT, SHIPS, SUBMARINES, MARITIME CRAFT, GROUND ARMORED VEHICLES, AND WEAPON SYSTEM GROUND FACILITIES BY FY1996, REPLACING A VARIETY OF CFCs
- CLEANING AGENTS AND SOLVENTS IN PRODUCTION AND MAINTENANCE OF WEAPON SYSTEMS BY FY1996, REPLACING A VARIETY OF ODSS

HALON ALTERNATIVES R&D STEERING GROUP



# **ODS ALTERNATIVES TECHNOLOGY STRATEGY**

## **Approach**

- **EMPHASIS IS PLACED ON:**
  - **EVALUATING NEW OR EXISTING ALTERNATIVES READILY AVAILABLE FROM INDUSTRY (NOW OR IN THE NEAR FUTURE)**
  - **MONITORING INDUSTRY ACTIVITIES AND ACCOMPLISHMENTS IN ODS ALTERNATIVES R&D**
  - **PROVIDING APPROPRIATE INCENTIVES TO INDUSTRY TO ADDRESS DoD NEEDS**
  - **ENGAGING IN COOPERATIVE ACTIVITIES WITH OTHER GOVERNMENT AGENCIES**
  - **SEEKING BILATERAL OR MULTILATERAL COLLABORATIVE EFFORTS WITH FOREIGN MILITARY ESTABLISHMENTS**

**HALON ALTERNATIVES R&D STEERING GROUP**

**ODS ALTERNATIVES  
TECHNOLOGY DEVELOPMENT  
PLAN (TDP)**

## ODS ALTERNATIVES TECHNOLOGY DEVELOPMENT PLAN

Execution Progress: Planning

- THE STEERING GROUP HAS DEVELOPED A TECHNOLOGY DEVELOPMENT PLAN (TDP) WHICH ADDRESSES:
  - TESTING (INCLUDING TOXICITY TESTING)
  - VALIDATION OF ALTERNATIVES IN ACCORDANCE WITH APPROVED SERVICE CRITERIA
  - DETERMINATION OF IMPACT ON WEAPON SYSTEMS
  - DETERMINATION OF MAJOR MILESTONES
  - ALLOCATION OF REQUIRED RESOURCES
- THE TDP WAS COORDINATED THROUGH THE SERVICE ACQUISITION EXECUTIVES AND ISSUED IN MAY 1993
- THE TDP FY94 UPDATE IS IN FINAL DRAFT AND WILL BE ISSUED IN MAY 1994

HALON ALTERNATIVES R&D STEERING GROUP

# ESTIMATED ODS ALTERNATIVES R&D CATEGORY 6.2/6.3 FUNDING REQUIREMENTS

(FUNDING IN \$M)

FY	93	94	95	96	97	98	99	00	TOTALS
ARMY	1.6	12.8	10.0	5.7	3.7	3.2	1.4	-	38.4
NAVY	15.7	29.3	22.6	18.6	12.5	-	-	-	98.7
AIR FORCE	8.2	6.2	4.7	1.9	5.0	6.2	2.7	0.2	35.1
TOTALS	25.5	48.3	37.3	26.2	21.2	9.4	4.1	0.2	172.2

HALON ALTERNATIVES R&D STEERING GROUP

# TECHNICAL PROGRESS/ACCOMPLISHMENTS

## Halon Alternatives

- TP-1: FIRE EXTINGUISHMENT IN MANNED SPACES
  - ✓ Down-selected to 4 alternatives (FM-200/FE-13/Fine Water Mist/AFFF) for large-scale tests in shipboard applications
  - ✓ Down-selected to 3 agents (FM-200/PFC-410/NAF S-III) for large-scale tests in aircraft cargo bays/simulators/critical facilities
  - ✓ CF3I (2nd gen chemical) selected for small/large-scale tests
- TP-2: FIRE EXTINGUISHMENT IN AIRCRAFT UNMANNED SPACES
  - ✓ Perfluorohexane determined to be an acceptable streaming agent alternative to Halon 1211 (requires usage certif.)
  - ✓ Down-selected to 4 agents (FM-200/FE-25/FC-218/CF3I) for engine nacelle/dry bay large-scale tests
  - ✓ CF3I being evaluated as a potential "drop-in" fluid

HALON ALTERNATIVES R&D STEERING GROUP

# **TECHNICAL PROGRESS/ACCOMPLISHMENTS**

## **Halon Alternatives**

- **TP-3: EXPLOSION SUPPRESSION IN AIRCRAFT UNMANNED SPACES**
  - ✓ Fuel cell inerting usage of ODSs being phased out in the Navy/Air Force (used in F-16/F-117/A-6)
    - OBiGGS selected for F117 application
    - TP activities terminated
- **TP-4: EXPLOSION SUPPRESSION IN ARMORED VEHICLE MANNED SPACES**
  - ✓ Funding just released - efforts commencing in FY94
- **TP-5: THRUST CONTROL IN BOOSTER ROCKETS/MINUTEMAN III**
  - ✓ Three sub-optimal alternatives screened (FC-40/barium perchlorate/perfluorohexane)
  - ✓ Perfluorohexane selected as Halon 2402 replacement
  - ✓ Thrust vectoring software and delivery system being modified and tested with a sub-optimal alternative

**HALON ALTERNATIVES R&D STEERING GROUP**

## TECHNICAL PROGRESS/ACCOMPLISHMENTS

### CFC Alternatives

- TP-6: ALTERNATIVES FOR REFRIGERATION AND ENVIRONMENTAL CONTROL

- ✓ HFC-134A selected as a backfit alternative for all R-12 chill water and refrigeration units in the fleet
- ✓ E-134 eliminated from further consideration due to difficulties in availability, severe decomposition in submarine life support systems, and material compatibility problems
- ✓ Down-selected HCFC-124 for CFC-114 replacement testing
- ✓ Down-selected to HFC-236ea and HFC-236fa (2nd gen fluids) for further tests of non-ODS refrigerants

- TP-7: ALTERNATIVES FOR PRECISION CLEANING APPLICATIONS

- ✓ Replacements for methyl chloroform, CFC-113, CFC-11, and carbon tetrachloride being investigated
- ✓ No single replacement solvent for methyl chloroform or CFC-113 without compromises in flammability, throughput, or cost

HALON ALTERNATIVES R&D STEERING GROUP

# ISSUES/CONCERNS OF TECHNICAL ALTERNATIVES

## 1. FIRE EXTINGUISHMENT IN MANNED SPACES (SHIPS/AIRCRAFT/CRITICAL FACILITIES)

### ALTERNATIVES

### ISSUES/CONCERNS

FM-200

FE-13

PFC-410

NAF S-III

CF3I

FINE WATER MIST

AFFF

CARDIAC SENSITIZATION/HIGH LEVELS OF HF

ATMOSPHERIC LIFETIME

ATMOSPHERIC LIFETIME

ODP/CARDIAC SENSITIZATION

ODP AT ALTITUDE/STABILITY/MATERIAL COMPATIBILITY

DELIVERY SYSTEM/ADDITIVES

DELIVERY SYSTEM/ENHANCEMENTS

## 2. FIRE EXTINGUISHMENT IN AIRCRAFT UNMANNED SPACES

### ALTERNATIVES

### ISSUES/CONCERNS

FM-200

FE-25

FC-218

CF3I

PERFLUOROHXANE GLOBAL WARMING

HIGH BOILING POINT

PRESSURE RISE IN SMALL SCALE TESTS (DRY BAYS)

MADE IN LAB QUANTITIES/NOT ON SNAP LIST

ODP AT ALTITUDE/STABILITY/MATERIAL COMPATIBILITY

(NOTE: ALL ALTERNATIVES HAVE 2-3X WEIGHT/VOLUME PENALTIES EXCEPT CF3I)

HALON ALTERNATIVES R&D STEERING GROUP



## ISSUES/CONCERNS OF TECHNICAL ALTERNATIVES

### 3. EXPLOSION SUPPRESSION IN AIRCRAFT UNMANNED SPACES

<u>ALTERNATIVES</u>	<u>ISSUES CONCERNS</u>
---------------------	------------------------

OBIGGS	WEIGHT/VOLUME
--------	---------------

### 4. EXPLOSION SUPPRESSION IN ARMORED VEHICLES MANNED SPACES

<u>ALTERNATIVES</u>	<u>ISSUES CONCERNS</u>
---------------------	------------------------

FM-200	HIGH LEVELS OF HF
FE-13	HIGH LEVELS OF HF
HFC-134a	HIGH LEVELS OF HF
FINE WATER MIST	WATER VOLUME/ADDITIVES
CF3I	CHRONIC TOXICITY/MATERIAL COMPATIBILITY

### 5. THRUST CONTROL IN BOOSTER ROCKETS/MINUTEMAN III

<u>ALTERNATIVES</u>	<u>ISSUES CONCERNS</u>
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PERFLUOROHXANE	GLOBAL WARMING
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HALON ALTERNATIVES R&D STEERING GROUP

## ISSUES/CONCERNS OF TECHNICAL ALTERNATIVES

### 6. REFRIGERATION AND ENVIRONMENTAL CONTROL (SHIPS/SUBMARINES/AIRCRAFT)

<u>ALTERNATIVES</u>	<u>ISSUES/CONCERNS</u>
HFC-134a	CFC-12 BACKFIT COSTS
HCFC-124	CLASS II ODS (PHASEOUT BY 2030)
HFC-236ea	NO MANUFACTURING SOURCE/TOXICITY UNKNOWN
HFC-236fa	NO MANUFACTURING SOURCE/TOXICITY UNKNOWN

### 7. GENERAL AND PRECISION CLEANING

<u>ALTERNATIVES</u>	<u>ISSUES/CONCERNS</u>
Numerous aqueous/ semi-aqueous processes being evaluated	Drying/corrosion/effectiveness

HALON ALTERNATIVES R&D STEERING GROUP

## SUMMARY

- PROGRESS IS BEING MADE
  - By 1996, near-term alternatives are planned to be available for use as Halon 1301 replacements in
    - ✓ Ships
    - ✓ Aircraft engine nacelles/dry bays
    - ✓ engine compartments of ground armored vehicles
  - A replacement for CFC-12 has been identified (HFC-134a)
- THUS FAR, THE MAGIC ELIXIR IS PROBLEMATICAL (CF3I ??)
- AN ACQUISITION POLICY/STRATEGY SEEMS NEEDED

HALON ALTERNATIVES R&D STEERING GROUP

**RISK REDUCTION ENGINEERING LABORATORY  
POLLUTION PREVENTION RESEARCH PROGRAM**

**Ms. N. Teresa Hoagland, EPA**

Environmental Protection Agency--Risk Reduction Engineering Laboratory  
Pollution Prevention Research Program  
N. Theresa T. Hoagland  
26 April 1994

ABSTRACT

The Environmental Protection Agency's Pollution Prevention (P2) Research Program at the Risk Reduction Engineering Laboratory (RREL), in Cincinnati, OH focuses on the scientific issue "How should consumer, government and industrial products and processes be designed, manufactured, used, and/or performed so that their manufacture, use, disposal, or performance will have a minimal effect on the environment." Research projects addressing this issue are divided into several areas including: (1) Clean Technology Projects; (2) Clean Products Projects; (3) P2 Assessments; (4) Longer Term P2 Research; and (5) Cooperative P2 Projects with Other Federal Agencies.

As an example, the Clean Technology Projects develop, demonstrate, and evaluate innovative processes for reducing pollution through source reduction. One of the projects in this area focuses on technology demonstrations that have potential for reducing one or more of the 17 hazardous chemicals targeted under the 33/50 program. The objective is to provide information that can assist companies in adopting technologies for reducing these substances on a voluntary basis. Another program, Support for the Source Reduction Review Program (SRRP) is a set of projects aimed at 17 target industries, which are considered of priority interest because they are affected by coming regulations or consent decrees with prescribed time tables.

The Clean Products Program supports various activities to further the understanding of environmentally cleaner products and to provide information for the development and adoption of cleaner products in the United States. The goals of the Cleaner Products Research Program are to provide guidance on the design, manufacture, use, and recyclability of industrial intermediate and consumer products; to evaluate substitution, reformulations, and alternatives through demonstrations and case studies; and to transfer the results of all findings through reports, journals, technical seminars, workshops, conferences and other appropriate media. A sample output has been the Life Cycle Design Guidance Manual, incorporating the principles of total quality management, multiple criteria decision making, and life cycle assessment into the design of processes and products. The life cycle assessment (LCA) concept looks at the "cradle-to-grave" or "cradle to-cradle" environmental impacts and releases of products, processes and activities. A second important tool being developed under this program is one to measure the progress of pollution prevention.

Pollution prevention (P2) assessments and research projects are conducted at a variety of non-Federal government and private sector industries under the Pollution Prevention Assessments and Support Program. Examples of projects under this program include: a P2 assessment plan for public agencies developed by cooperative agreement with a city and county metropolitan sewer district; and a three-year Pollution Prevention Strategies for Sustainable Development project to investigate various pollution prevention policies regulations, and technologies to increase the adoption of pollution prevention strategies in NATO and other countries.

Longer range pollution prevention issues, such as developing a substitute for lead-acid and nickel-cadmium batteries, and source reduction in power generation are being addressed under the Clean Technology Design and Development projects.

Under the Cooperative P2 Projects with Other Federal Agencies, projects are conducted to identify new technologies and techniques for reducing waste primarily from industrial processes used by Federal agencies, and to enhance pollution prevention through technology transfer of lessons learned resulting from pollution prevention opportunity assessments (PPOAs), source reduction demonstrations and case studies, and joint waste reduction research projects. Examples of products being developed include a pollution prevention guide for Federal facilities (Federal Facility Pollution Prevention - Tools for Compliance), and a study of methyl ethyl ketone (MEK) substitutes for use in aircraft paint stripping. Most of this research is being conducted under the Waste Reduction evaluations at Federal Sites (WREAFS) program. Several WREAFS projects for DoD and

DOE were funded under the Strategic Environmental Research and Development Program (SERDP).

The three primary objectives of the WREAFS Program are to: 1) conduct pollution prevention assessments and case studies; 2) conduct research and demonstration projects jointly with other Federal activities; and 3) provide technology and information transfer of pollution prevention results. These projects include joint efforts between EPA and the Department of Defense, Department of Energy, Department of Transportation, Department of Agriculture, Department of Veterans Affairs, Department of Interior, Department of Treasury, the National Aeronautics and Space Administration, the White House, and the Postal Service. Thirteen of the 26 projects are with the Department of Defense under the Army, Air Force, and Navy.

The WREAFS projects identify case study and research opportunities to implement pollution prevention for a range of military and industrial operations including plating, metal cleaning, solvent degreasing, spray painting, vehicle and battery repair, ship bilge cleaning, torpedo overhaul, buoy restoration, optical lens grinding, hospital operations, laboratory analysis, mail processing, building maintenance, lock and dam repair, and others. The pollution prevention recommendations are source reduction methods including technology, process and procedural changes, and methods of reuse or recycling. Many of the P2 opportunities identified during WREAFS projects involved low-cost changes to equipment and procedures and were often implemented by the facility without extensive engineering evaluations. Other P2 opportunities identified during these projects required further study before full implementation could be realized. Typically, opportunities requiring further evaluation were those that had the potential for affecting the process and/or required the use of new procedures or equipment. In such cases it was necessary to conduct demonstration projects.

Technology and information resulting from all of the Pollution Prevention research programs are transferred through several media, including project summaries, compendiums, reports, papers, articles, workshops, seminars and presentations, and computer networks, such as the Pollution Prevention Information Clearinghouse.

**COMPLIANCE WITH EXECUTIVE ORDER 12856**

**Maj. Richard Travis, USA TECOM**

# **COMPLIANCE WITH EXECUTIVE ORDER 12856**

**Major Richard Travis  
United States Army  
Test and Evaluation Command  
Aberdeen Proving Ground, Maryland**



## **COMPLIANCE WITH EXECUTIVE ORDER 12856**

- **DEVELOP SENSE OF JOINT OWNERSHIP AMONG  
DIRECTORATES**
- **COMPILE DATABASE ON PAST HM AND HW ACTIVITIES**
- **CONDUCT INITIATIVES ASSESSMENT**
- **IDENTIFY OBSTACLES**

## **OWNERSHIP**

- **INTERJECT HAZMIN/PP IN OTHER DEPARTMENTS  
ACTIVITIES**

- **REQUIRE PARTICIPATION BY ALL DEPARTMENTS/  
TENANTS IN COMMITTEES**

- **PUBLIC RELATIONS**

## **DATABASE**

- **INVENTORY OF WHERE HAZ WASTE GENERATION  
SITES ARE LOCATED**
- **ANNUAL HAZARDOUS WASTE GENERATION REPORT**
- **MATERIAL TRACKING**

## **INITIATIVES**

- **CONTRACTOR ASSESSMENTS**
- **REWARDING GOOD IDEAS**
- **LET THE PEOPLE WHO KNOW WHAT'S WRONG  
SHOW YOU WHAT'S RIGHT**

## **OBSTACLES**

- THE USUAL - "NOT MY YOB MON"  
MANPOWER, MONEY

- OTHERS - DIFFICULTY IN ESTIMATING STARTUP  
COSTS

LACK OF CONTROL ON CONTRACTORS

**VII. TEST PROGRAMS—INTEGRATING ENVIRONMENTAL  
CONSIDERATIONS PANEL**

**ENVIRONMENTAL ASPECTS OF  
THE TEST PLANNING PROCESS  
Mr. Thomas Maday, NAWC-AD**

# **ENVIRONMENTAL ASPECTS OF THE TEST PLANNING PROCESS**

VII-1

**27 APRIL 1994  
THOMAS MADAY  
NAWCADFTG**



# **AGENDA**

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**SPONSOR REQUIREMENTS AND TASKING**

**T&E RESPONSE TO SPONSOR**

**TEST PLAN PROCESS**

**TEST PLAN FORMAT**

**PATUXENT RIVER ENVIRONMENTAL ACTIONS**

**CONCLUSIONS**

# **ENVIRONMENTAL LEGISLATION MADE SIMPLE**

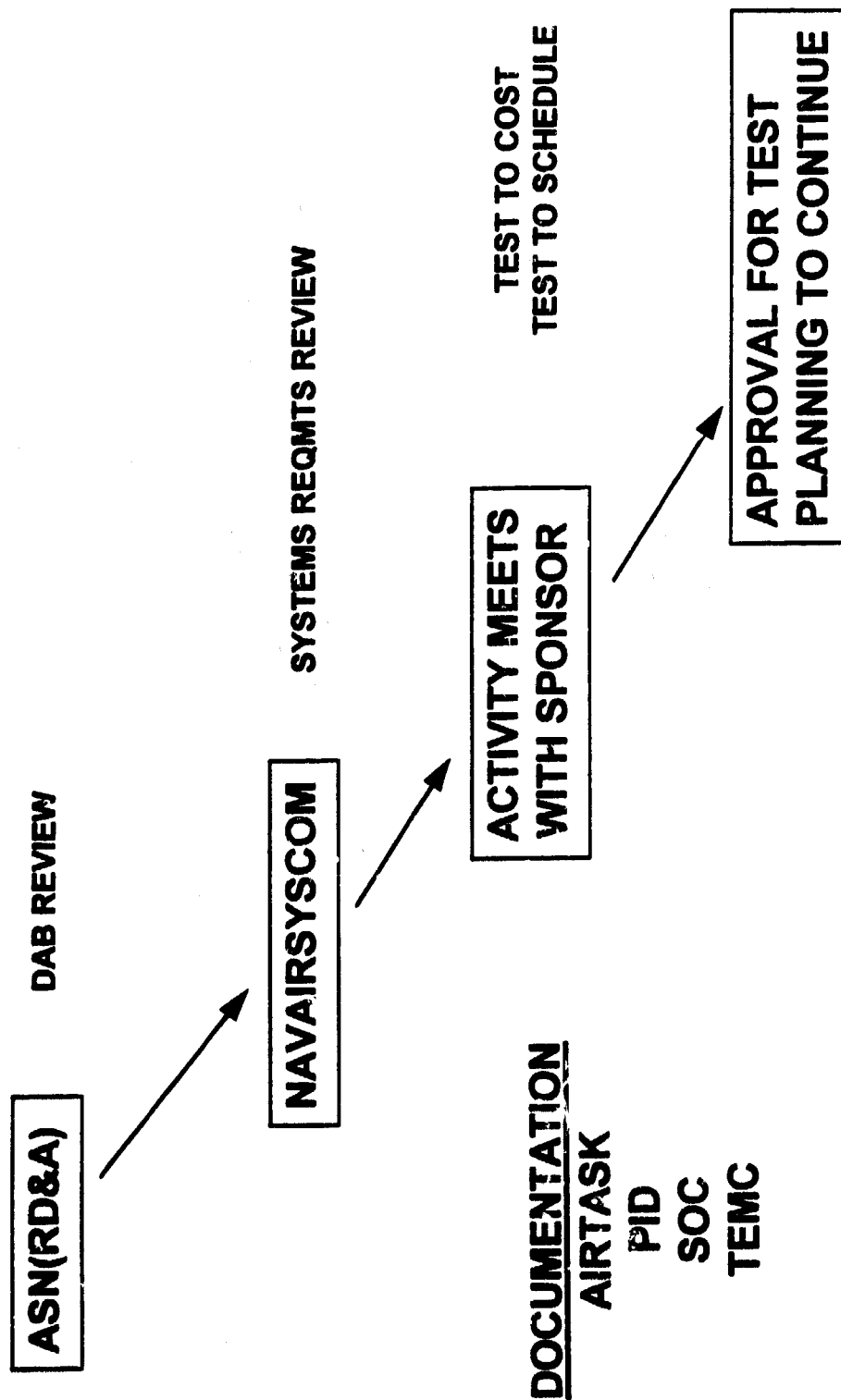
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- **NEPA**      tell us what you are going to do before you do it
- **OSHA**      tell us how you are doing it
- **CAA**        do not put anything up the stack
- **CWA**        do not put it out the pipe
- **SDWA**      do not put it in a hole in the ground
- **RCRA**      do not put it anywhere else
- **HMTA**      do not even carry it around
- **TSCA**      if it's such bad news, don't even make it in the first place
- **CERCLA**    if you put it in the ground in the past, dig it up

<b>NEPA</b> - National Environmental Policy Act	<b>SDWA</b> - Safe Drinking Water Act
<b>OSHA</b> - Occupational Safety and Health Act	<b>RCRA</b> - Resource Conservation and Recovery Act
<b>CAA</b> - Clean Air Act	<b>HMTA</b> - Hazardous Materials Transportation Act
<b>CWA</b> - Clean Water Act	<b>TSCA</b> - Toxic Substance Control Act
<b>CERCLA</b> - Comprehensive Environment Response, Compensation and Liability Act	

# SPONSOR REQUIREMENTS/TASKING

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# **DoD 5000.2M (FEB 1991)**

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## **SECTION F ENVIRONMENTAL ANALYSIS (ANNEX E)**

**DURING EACH PHASE OF THE ACQUISITION PROCESS, THE POTENTIAL ENVIRONMENTAL CONSEQUENCES OF EACH ALTERNATIVE BEING CONSIDERED SHALL BE IDENTIFIED AND ANALYZED.**

**INCLUDE IN THIS DOCUMENT:**

**NOTABLE ENVIRONMENTAL EFFECTS**

**PROPOSED MITIGATION MEASURES AND ASSOCIATED COSTS**

**WERE ENVIRONMENTALLY PREFERABLE ALTERNATIVES CHOSEN OR RECOMMENDED**

**HOW PROGRAM SCHEDULES, SITING ALTERNATIVES, AND PROGRAM COSTS ARE AFFECTED**

# **MIL-STD-499B (draft)**

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**ENVIRONMENTAL ANALYSIS AND IMPACT ASSESSMENT (PARA. 5.5.8)**

**THE PERFORMING ACTIVITY SHALL:**

**ADHERE TO ALL APPLICABLE STATUTES**

**ADHERE TO CONTRACTUALLY DESIGNATED HAZARDOUS MATERIAL LISTS**

**CONDUCT ENVIRONMENTAL ANALYSIS ON EACH:**

**SYSTEM PRODUCT**

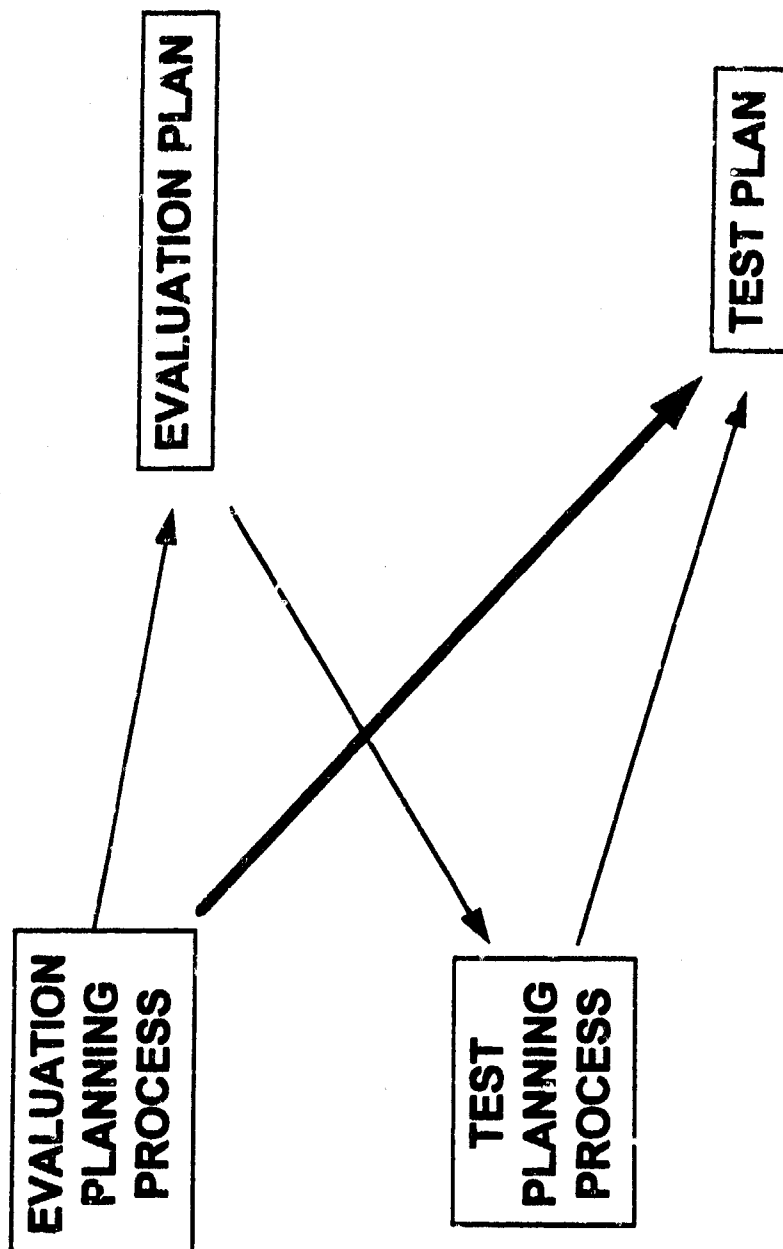
**PROCESS ALTERNATIVE**

**ASSESS IMPACTS OF METHODS DERIVED TO MITIGATE PROBLEMS**

**FOLD ANALYSIS RESULTS INTO EFFECTIVENESS ANALYSIS FOR SYSTEM  
DEFINITION, DESIGN, AND VERIFICATIONS**

# TEST PLANNING

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PRODUCT USED BY TESTERS

# **NAWCADPAXRVR TEST ORGANIZATION**

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## **SEVEN TEST DIRECTORATES**

**FORCE WARFARE AIRCRAFT TEST DIRECTORATE**

**ROTARY WING AIRCRAFT TEST DIRECTORATE**

**STRIKE AIRCRAFT TEST DIRECTORATE**

**SYSTEMS ENGINEERING TEST DIRECTORATE**

**COMPUTER SCIENCES DIRECTORATE**

**RANGE DIRECTORATE**

**TEST PILOT SCHOOL**

**NAVAL AIR STATION PATUXENT RIVER**

# **TEST PLAN PROCESS**

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**GENERATED BY AN ENGINEER/OFFICER TEAM IN SECTION**

**REVIEWED BY:**

**SECTION HEAD**

**DEPARTMENT HEAD/CHIEF ENGINEER**

**PROGRAM OFFICE (IF APPLICABLE)**

**DIRECTORATE CHIEF TEST PILOT/TECHNICAL DIRECTOR \***

---

**OTHER DIRECTORATES AS NECESSARY \***

**OTHER SERVICES/AGENCIES AS NECESSARY \***

**\* ASO FOR SAFETY/ENVIRONMENTAL CONCERNS**

**ALL TEST PARTICIPANTS ARE REQUIRED TO REVIEW AND UNDERSTAND THE TEST PLAN PRIOR TO CONDUCT OF TEST**



# **PROJECT TEST PLANS**

---

**AN APPROVED TEST PLAN IS REQUIRED PRIOR TO THE START OF ALL  
LABORATORY, SIMULATOR, GROUND, AND FLIGHT TESTS**

**PREPARED IN ACCORDANCE WITH A STANDARDIZED FORMAT**

**RECEIVE THOROUGH AND TIMELY REVIEW FOR CONTENT AND  
RISK MANAGEMENT**

**MONITORED TO ENSURE APPROVED TEST PLAN IS FOLLOWED**

**SAFELY ACCOMPLISHED ON SCHEDULE, WITHIN COST, AND WITH  
QUALITY RESULTS**

**PREVIOUS LESSONS LEARNED CONSIDERED**

# PROJECT TEST PLAN COVER

---

PROJECT/TEST PLAN CLASSIFICATION  
TITLE

AIRTASK/WORK UNIT

COGNIZANT SPONSORING ORGANIZATION/SPONSOR CODE

FTEG DIRECTORATE/DEPARTMENT/COST CENTER  
FTEG PROJECT ENGINEER/OFFICER  
AUTHORIZED FUNDS/EXPIRATION DATE  
JOB ORDER NUMBER

ESTIMATED COMPLETION DATE

GRAPH

PROJECT MILESTONES

CALENDAR

PERCENT ACCOMPLISHED

TOTAL FUNDS FOR 100%FLYING HOURS

TOTAL FLIGHT HOURS FOR 100%

REVIEW AND APPROVAL SIGNATURES  
CATEGORY OF TEST

# CATEGORY OF TEST

---

DEFINED DUE TO THE HAZARDS INVOLVED WITH CERTAIN PROJECT FLIGHTS AND THE INCREASED LEVEL OF AIRCREW EXPERIENCE REQUIRED TO SAFELY CONDUCT CERTAIN FLIGHT TESTS

- A. GROUND TESTS OR PROJECT FLIGHTS NOT INVOLVING POTENTIAL OR KNOWN HAZARDOUS OPERATIONS.
- B. GROUND TESTS OR PROJECT FLIGHTS INVOLVING POTENTIALLY HAZARDOUS OPERATIONS.
- C. GROUND TESTS OR PROJECT FLIGHTS INVOLVING KNOWN HAZARDOUS OPERATIONS.
- D. GROUND TESTS ON, OR ALL FLIGHTS IN, PROTOTYPE AIRCRAFT, INCLUDING ALL PREPRODUCTION AIRCRAFT AND ANY OTHER AIRCRAFT WHOSE UNIQUE CONFIGURATION OR VALUE WARRENTS CATEGORY D DESIGNATION BY THE DIRECTOR, FTEG.

# **CATEGORY B EXAMPLES**

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**AUTOMATIC CARRIER LANDING SYSTEMS -- SHIPBOARD  
ENGINE STALL SUSCEPTIBILITY  
HELICOPTER MINE COUNTERMEASURES TOWING**

**STORE SEPARATION  
EXTERNAL LIFT  
AIRSTART ENVELOPE DEFINITION -- MULTI-ENGINE**

**SONAR DIPPING  
ACCELERATED SERVICE TESTING  
ENGINE COMPONENT IMPROVEMENT**

**ENGINE-OUT TESTING: ONE ENGINE ON THREE OR FOUR-ENGINE  
AIRCRAFT  
CATAPULT AND ARRESTING GEAR CERTIFICATION  
UNMANNED AERIAL VEHICLE FLIGHT TEST**

**MISSION SOFTWARE NOT YET FLOWN THAT COULD AFFECT FLIGHT  
RELATED DISPLAYS, NAVIGATION/BOMBING ACCURACY**

# **CATEGORY C EXAMPLES**

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**FLUTTER TESTING**

**FIRST FLIGHT OF NEW/MODIFIED AIRCRAFT CONFIGURATION  
ABORTED TAKEOFFS**

**GROUND AND AIR MINIMUM CONTROL SPEED DETERMINATION  
SPINS**

**HIGH ANGLE-OF-ATTACK EVALUATIONS**

**ENGINE-OUT TESTING: ONE ENGINE ON TWO-ENGINE AIRCRAFT OR**

**TWO ENGINES ON FOUR-ENGINE AIRCRAFT**

**AIRSTART ENVELOPE DEFINITION -- SINGLE ENGINE**

**MINIMUM ENDSPEED CATAPULT SHOTS**

**CARRIER SUITABILITY STRUCTURAL TESTING**

**HELICOPTER/SHIP DYNAMIC INTERFACE TESTING**

**ENVELOPE EXPANSION**

**HAZARDOUS STORES SEPARATION**

**FLIGHT CONTROL SOFTWARE**

**TERRAIN AVOIDANCE**

**NIGHT BOMBING**

**ARMAMENT TESTING**

# **PROJECT TEST PLAN CONTENT**

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## **BACKGROUND**

### **PURPOSE**

**DESCRIPTION OF THE AIRCRAFT AND/OR EQUIPMENT**

## **SCOPE OF TESTS**

**TEST CONDITIONS, ENVELOPE, LOADINGS, CONFIGURATIONS,  
STANDARDS, FLIGHT CLEARANCE**

## **METHOD OF TESTS**

**PROCEDURES, DATA EXTRACTION/PROCESSING,  
INSTRUMENTATION, SUPPORT REQUIREMENTS**

## **SPECIAL PRECAUTIONS**

## **MANAGEMENT**

**FUNDING AND MANPOWER REQUIREMENTS, SCHEDULE/MILESTONES,  
PERSONNEL ASSIGNMENT, PROJECT SECURITY, REPORTS**

## **REFERENCES**

## **APPENDICES**

# **SPECIAL PRECAUTIONS**

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**ALL TEST PLANS WILL READ:**

**"CONTINUOUS NATIONAL ENVIRONMENTAL POLICY  
ACT TEST AND EVALUATION ACTION"**

**THIS STATEMENT WILL NOT CHANGE UNLESS THIS TEST PLAN CALLS FOR  
TESTING OF NEW**

**HAZARDOUS MATERIALS, ELECTRONIC EMISSIONS,  
COMPOSITE MATERIALS, LIVE ORDINANCE DROPS,  
MISSILE FIRINGS OR LASERS**

**THE DIRECTORATE SAFETY OFFICER SHALL REVIEW THE PROPOSED TESTS  
AND WILL ISSUE A SEPARATE ENVIRONMENTAL STATEMENT**

# **TEST PLAN OPTIONS**

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## **SUPPORT TEST PLANS**

**INTRODUCTION, SCOPE OF SUPPORT, METHOD, SPECIAL PRECAUTIONS (SAFETY AND ENVIRONMENTAL), MANAGEMENT**

## **TEST PLAN AMENDMENT**

### **FIRST PARAGRAPH**

**DESCRIBE BACKGROUND AS TO WHY THE CHANGE IS NECESSARY**

### **SUBSEQUENT PARAGRAPHS**

**EACH PARAGRAPH/SECTION/APPENDIX AFFECTED BY THE CHANGES SHOULD BE REVISED AND INCLUDED IN THIS STATEMENT**

**IF THERE IS A LARGE NUMBER OF CHANGES OR THE TEST PLAN IS MORE THAN 1 YEAR OLD, REWRITE TEST PLAN**



# **ENVIRONMENTAL ACTIONS AT NAS**

- CATAPULT/ARRESTMENT SITE
- HANGER/TARMAC IMPROVEMENTS
- OIL SPILL ABATEMENT FOR BAY
- BLOODSWORTH ISLAND CLOSED/MIGRATION
- SONABOUYS/LITHIUM BATTERIES ELIMINATED
- NOISE ABATEMENT FOR SUPERSONIC FLIGHT
- LIGHTNING AFTER NORMAL WORKING HOURS

# **ACETEF ENVIRONMENTAL ACTIONS**

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**PURGE ENGINES AND FUEL TANKS WITH 10/10 OIL**

**PLASTIC DRIP PANS FOR HYDRAULIC FLUIDS**

**WEAPONS DISARMED**

**EJECTION SEATS DISARMED**

**HAZARDOUS WASTE HANDLED**

**LASER SAFETY TRAINING& NON PASS/NON REFLECTING WALLS**

**RADAR ENERGY ABSORBING WALLS/HIGH ENERGY REFLECTOR**

# **ENVIRONMENTAL REGULATIONS 1**

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- **NAVAIRINST 13900.1D                      6 APRIL 88**  
**AIRCRAFT TEST AND EVALUATION FACILITY**  
**(ATEF) ; HIGH POWER TURNS, THRUST**  
**MEASUREMENT**
- **FTEGINST 5100.1                      24 FEB 93**  
**OCCUPATIONAL SAFETY AND HEALTH**  
**(OSH) PROGRAM**
- **FTEGINST 6100.1                      2 JUNE 92**  
**SMOKING POLICY**
- **NASPAXRIVINST 4110                      22 OCT 92**  
**INSPECTION/TURN-IN OF EXCESS**  
**HAZARDOUS MATERIALS (EHM)**
- **NASPAXRIVINST 6240                      26 APRIL 91**  
**LIST OF OIL SPILL RESPONSE TEAM**  
**MEMBERS**

# **ENVIRONMENTAL REGULATIONS 2**

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- NASPAXRIVINST 11015      21 JUNE 93  
HUNTING AND TRAPING SEASONS AND BAG  
LIMITS FOR 1993-1994
- NASPAXRIVINST 3710.14B    2 APRIL 85  
PROCEDURES FOR INVESTIGATING  
AIRCRAFT DISTURBANCE  
COMPLAINTS/SONIC BOOM CLAIMS
- NASPAXRIVINST 3750.5B    1 MARCH 93  
BIRD STRIKE REDUCTION PROGRAM
- NASPAXRIVINST 4010.3F    15 JULY 92  
NASPAXRIV HAZARDOUS WASTE  
MANAGEMENT PLAN
- NASPAXRIVINST 4010.4E    22 NOV 91  
PRECIOUS METALS RECOVERY PROGRAM

# **ENVIRONMENTAL REGULATIONS 3**

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- NASPAXRIVINST 4100.3      29 JUNE 87  
ENERGY RESOURCES CONSERVATION  
PROGRAM
- NASPAXRIVINST 4100.4A      11 JAN 93  
RECYCLABLE MATERIAL SALES PROGRAM
- NASPAXRIVINST 5090.1      6 OCT 92  
ENVIRONMENTAL COMPLIANCE AND  
ENHANCEMENT PROGRAM
- NASPAXRIVINST 6240.4D      8 FEB 93  
OIL AND HAZARDOUS SUBSTANCE SPILL  
CONTINGENCY PLAN FOR NASPAXRIV
- NASPAXRIVINST 6240.11C      5 MAR 93  
FIREWOOD CUTTING
- NASPAXRIVINST 6240.12      12 APR 93  
AIR POLLUTION EPISODE AND STANDBY  
EMISSION REDUCTION PLAN FOR NASPAXRIV

# **ENVIRONMENTAL REGULATIONS 4**

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- NASPAXRIVINST 6280.1A 13 AUG 92  
SPILL PREVENTION CONTROL AND  
COUNTERMEASURES PLAN FOR NASPAXRIV  
AND SOLOMONS ISLAND
- NASPAXRIVINST 11013.1 18 DEC 91  
EXCAVATION PERMITS
- NASPAXRIVINST 11015.6K 19 NOV 92  
HUNTING AND TRAPPING
- NASPAXRIVINST 11015.7G 18 JUNE 92  
FISHING, SHELLFISHING AND CRABBING  
REGULATIONS
- NASPAXRIVINST 11015.8A 13 AUG 91  
PRESCRIBED BURNING
- NASPAXRIVINST 11240.19D 12 JUN 92  
TRANSPORTATION EQUIPMENT OPERATIONS  
AND MAINTENANCE MANAGEMENT

# ENVIRONMENTAL AWARDS FOR NAS PATUXENT RIVER

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SECNAV ENVIRONMENTAL QUALITY AWARD  
SECDEF ENVIRONMENTAL QUALITY AWARD

1992 WINNER  
1992 WINNER

## NATURAL RESOURCES CONSERVATION AWARDS

SECNAV

SECDEF

SECNAV (INDIVIDUAL CATEGORY)

SECDEF (INDIVIDUAL CATEGORY)

SECNAV

SECDEF

SECNAV

SECNAV

CNO

SECDEF

DoD (MERITORIOUS ACHIEVEMENT)

DoD (MERITORIOUS ACHIEVEMENT)

DoD (MERITORIOUS ACHIEVEMENT)

1991 WINNER

1991 WINNER

1989 WINNER

1989 WINNER

1987 WINNER

1987 RUNNER-UP

1985 RUNNER-UP

1979

1975

1975 RUNNER-UP

1973

1971

1968

# **NAWC AD PATUXENT RIVER**

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**DATA COLLECTION TO DEVELOP A RANGE MANAGEMENT PLAN**

**IDENTIFY AREAS OF POTENTIAL ENVIRONMENTAL DEGRADATION**

**MATCH ENVIRONMENTAL STANDARDS WITH OPERATIONAL  
PROCEDURES**

**RESOURCES AUTOMATED MANAGEMENT SYSTEM (RAMS) UNDER  
DEVELOPMENT AT PATUXENT RIVER WILL MAINTAIN DATA INTEGRITY**

**CONTINUOUS ENVIRONMENTAL TRAINING**  
**FOR ALL PROJECT OFFICERS/ENGINEERS**



# **CONCLUSIONS**

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**MAJOR PROGRAMS REVIEWED FOR ENVIRONMENTAL COMPLIANCE  
NUMEROUS TIMES DURING THE ACQUISITION PROCESS**

**TEST PLANS REVIEWED FOR ENVIRONMENTAL COMPLIANCE MANY  
TIMES PRIOR TO TESTING**

**PATUXENT RIVER HAS IMPLEMENTED MANY ENVIRONMENTAL  
IMPROVEMENTS TO DATE**

**FUTURE TEST PLANNING WILL MAKE BETTER INFORMED DECISIONS**

**ENVIRONMENTAL SECURITY COMPLIANCE**

**Mr. Mahlon White, ODUSD(ES)/CM**

## ENVIRONMENTAL SECURITY COMPLIANCE

Compliance is the most important environmental discipline affecting the future quality of life and mission success. It is complex, expensive, and exerts significant impact on all DoD operations. Regulations cover environmental and safety media for past and future events as well as current operations.

Past Actions To correct and clean up past disposal sites, we've initiated an aggressive clean up program. The Comprehensive Environmental Response and Liabilities Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) of 1986 direct those initiatives.

Future Action To prevent future pollution, we've put in place comprehensive initiatives in pollution prevention which are preventive medicine for tomorrow's potential environmental problems. Minimizing waste will help minimize future problems and liability. Our initiatives comply with pollution prevention regulations and the President's Executive Order.

Current Operations Our goal is full and sustained compliance with existing Federal, State, local and host country requirements.

DoD's operations are subject to the same environmental, safety, and health laws and regulations as private industry, as well as additional requirements for federal facilities. Most of these environmental statutes are tough and have provisions for civil and criminal penalties and they hold our commanding officers directly responsible for compliance. Ensuring adequate funds are programmed and available to meet legal and mission requirements are the key factors in ensuring we meet our commitment to Defense and Environmental Security. Failure to comply can result in fines and penalties and affect how well the mission is accomplished. Often, if you can't comply, you can't train, you can't operate or deploy, and you can't close former military bases. Non compliance can directly impact readiness.

These requirements are expensive. In FY 94 we budgeted \$2,212.3M for compliance as compared to \$2,118.0 in FY 93. This represents a decrease of 105.7 resulting from compliance in hazardous waste management, clean water requirements, and from completing environmental assessments and planning documents. In FY 95 we increased our budget request from \$170M to \$2,182.3M due to increasing Federal, State and local regulations. We anticipate increased spending in clean air and clean water with the enactment of the reauthorizations. These changes, external to DoD, place new demands on declining resources. Commanders can expect future requirements to continue to be complex and more stringent.

These regulations significantly affect DoD operations. To comply with U.S environmental protection, safety, and health laws, the DoD annually:

- Obtains thousands of air emission permits; hundreds of water discharge permits for sewage, industrial, and waste water treatment plants; and storm water permits for every base;

- Manages 300 to 400 permits to treat, store or dispose of hazardous waste under the Resource Conservation and Recovery Act;
- Abates thousands of Occupational Safety and Health Administration discrepancies;
- Manages 30,000 regulated underground storage tanks; and
- Prepares spill prevention and response plans at every base.

The Department faces new challenges in compliance, including waiver of sovereign immunity under the Federal Facility Compliance Act and new requirements to report the acquisition, use and release of toxic chemicals at every base under the President's Executive Order on Pollution Prevention and Right to Know in the Government. These requirements don't begin to address the myriad of complex laws and regulations overseas.

The Department has identified several methods to improve program performance, cost control, and ensure prudent use of these funds. These measures include periodic compliance self-assessments, improved training and education, and an improved budget system.

Near-term compliance actions to help achieve these goals include: the implementation of annual comprehensive audits for every major installation, reducing open enforcement actions 25 percent from 1993 levels, upgrading fire training areas; constructing waste water treatment facilities.

Our progress to date has been significant. We have developed an environmental council and committee structure to ensure we share information and lessons learned, both internal and external to DoD. This system allows us to share information and solve problems in a much more effective manner. We will identify solutions to problems, act proactively and improve communications with regulators so we can resolve issues before they become problems.

We have developed environmental self audit programs among all the Services. These internal assessments will help identify problems and provide solutions before they become Notices Of Violations (NOVs).

The Department has improved its training and awareness program. Our initiatives extend beyond environmental professionals to every DoD employee, blue collar worker, manager, and military service member. We will make sure they're aware of their responsibilities. We've also integrated environmental considerations throughout the acquisition process to ensure the Department meets its environmental responsibilities.

By improving relationships and communications with regulators and our neighbors, we have moved from an adversarial role to one of working together to solve common problems.

Our program budgeting and execution has improved significantly. Our programmed budgets and execution rates are closer than at any previous time.

We have developed and implemented overseas environmental policy and established DoD baseline guidance to ensure good stewardship and compliance. One of our most significant accomplishments last year was the issuance of policy on clean up.

I'm proud of our efforts to review current initiatives and improve them.

- **Fast Track Clean Up.** Over half of our expenses to date have gone for studies. We are moving from this analysis phase to actual clean up. Under fast track clean up, we will work with communities and regulators to make "clean up" a reality.
- **Environmental Justice.** We are working hard to implement the President's Executive Order on Environmental Justice. We want to make sure environmental compliance does not place unfair demands on one segment of society.
- **Energy Conservation.** We're on track by meeting the energy reduction goal of 20 percent by the year 2000. By the end of 1995, the Department will have acquired over 10,000 Alternative Fuel Vehicles. We've added \$983 million to the Department's existing budget of \$200 million for energy resource management.
- **Legacy Program.** We continue to build on our successes in Legacy, our program to protect and support natural cultural and historic resources. We've now funded almost 800 projects throughout the United States.
- **International Action.** We established an Office of International Activities to provide a coordinated approach to international environmental security issues. This office will provide overseas restoration policy, international cooperative agreements and help provide Environmental Security Assistance.

Finally, we've developed a strategy to make compliance our standard. This will be our toughest challenge. We want to close NOV's quicker than we have before. We are falling behind, in part, because of the assertiveness of the regulatory agencies. We have gone from 1036 open NOV's Sept 91 to 1523 open NOV's in Sept 93. We are in the process of identifying methods to solve these problems faster and steadily improve our compliance posture. Our plan for the future is to reach our goal of full and sustained compliance. We will have our implementation plan with milestones in place by December 1994.

We also expect to go beyond compliance and the requirements mandated by law. We expect to be good stewards for those resources entrusted to us. We hope our initiatives in conservation, pollution prevention and compliance will demonstrate to others that environmental stewardship, economic growth, and providing for the nation's defense are not mutually exclusive, but can be accomplished together.

We hope to demonstrate in our clean up, technology, partnerships, and other initiatives, the synergy and effectiveness that come from working together and sharing ideas and resources.

We expect new challenges, tougher laws and more rigorous enforcement in the future, particularly at the State and local levels. Despite these factors, we expect our initiatives such as self audits, improved training and better external communications to help us meet our compliance goals.

ODUSD(ES)/CM  
M.B. White/ 042194/604-5571

**ENVIRONMENTAL IMPACT ANALYSIS**  
**Mr. Ken Amster, NAWC-WD**

# **ENVIRONMENTAL IMPACT ANALYSIS**

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## **DODINST 5000.2 EXAMPLES OF NAVY IMPLEMENTATION**

**PRESENTED BY:**

**KEN AMSTER**

**Weapons Planning Group  
Naval Air Warfare Center, Weapons Division  
China Lake, CA.**

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# **ENVIRONMENTAL IMPACT ANALYSIS**

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## **TOPICS TO BE COVERED**

- Summary of Requirements Established by  
DODINST 5000.2
- Conducting Environmental Analyses
- Establishing and Implementing Mitigation Methods
- Impacts of DODINST 5000.2 upon the RDT&E  
Community

# **ENVIRONMENTAL IMPACT ANALYSIS**

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## **REQUIREMENTS IMPOSED BY DODINST 5000.2**

- Identify Potential Environmental Consequences Throughout Entire Weapon Life Cycle
- Identify Appropriate Mitigation Measures
- Implement Mitigation Measures
- Identify Residual Environmental Impacts
- Determine Effects of Mitigation Measures on Cost, Schedule, and Siting

# ENVIRONMENTAL IMPACT ANALYSIS

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## SECNAVINST 5000.2A

### Draft Guidance & Clarification

- Conduct Preliminary Environmental Survey Prior to

#### Milestone I

- Conduct Program Environmental Analysis Prior to

#### Milestone II (and for each successive Milestone)

- Overview of Environmental Impacts:

- Throughout Life Cycle
- Impacts on Natural and Cultural Resources
- Determine appropriate Mitigation Measures & implement
- Establish need, *if any*, for NEPA Documentation
- Determine effects upon cost, schedule, and siting

# ENVIRONMENTAL IMPACT ANALYSIS

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## THE NATIONAL ENVIRONMENTAL POLICY ACT

- Requires Major Federal Activities prepare:  
Environmental Assessment (and FONSI)  
Environmental Impact Statement (and ROD)  
Categorical Exclusion
- When and how to accomplish this promulgated by CEQ  
Title 40 CFR 1500-1508 (implementation regulations)
- NEPA Document is a *planning document*

# **ENVIRONMENTAL IMPACT ANALYSIS**

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## **CONDUCTING ENVIRONMENTAL ANALYSIS METHODOLOGY**

- Develop Outline of Life Cycle
- Prepare Environmental Checklist
- Evaluate Each Activity within Life Cycle using Checklist  
(What is potential for environmental impacts?)
- Develop & Propose Appropriate Mitigation Measures
- Evaluate Need for Future Analysis

# ENVIRONMENTAL IMPACT ANALYSIS

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## PROGRAM LIFE CYCLE

Engineering and Manufacturing Development  
Design work  
Fabrication of Engineering Test Models  
Testing  
Fitment tests  
Effectiveness tests  
Qualification tests  
OPEVAL/TECHEVAL  
Production  
Fabricate components  
Assemble AUR  
Transportation & Storage  
Contractor to NWS  
NWS to fleet  
Deployment / Employment / Maintenance  
Disposal

# ENVIRONMENTAL IMPACT ANALYSIS

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## ENVIRONMENTAL IMPACT CHECKLIST

Water Resources  
Geology/Seismology  
Air Quality  
Natural Resources  
Vegetation  
Wildlife  
Archaeology  
Noise / Vibration  
Human Interest  
Infrastructure  
Hazardous Waste  
Permits

# ENVIRONMENTAL IMPACT ANALYSIS

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## COMMON FINDINGS of ANALYSES

- DEM/VAL and EMD

Fabrication Activities

Development Testing and OPEVAL / TECHEVAL

- Production

Manufacturing Activities

Production Testing

- Deployment / Employment

Transportation Vehicles New Transportation Nodes

Repair Activities

Training Exercises

- Demilitarization and Disposal



# ENVIRONMENTAL IMPACT ANALYSIS

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## MITIGATION MEASURES

- Design Out Adverse Environmental Impacts  
(Think Green)
- Establish Pollution Prevention Program  
Hazardous Materials Management  
Pollution Abatement Efforts
- Test Management  
Permits  
NEPA Documentation
- Develop & Implement Demilitarization and Disposal  
Plan

# ENVIRONMENTAL IMPACT ANALYSIS

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## TEST MANAGEMENT

- Program Establishes Integrated Test Plan
  - Fitment Tests
  - Effectiveness Tests
  - Qualification Tests
  - TECHEVAL / OPEVAL Tests
- Test Categories
  - Laboratory Tests (Wind Tunnel, Anechoic Chamber, Shake Table)
  - Field Tests (Fast Cook-off, Static Fire, Detonation, Insensitivity)
  - Captive Carry Tests (Seeker, Guidance software, Flight Clearance)
  - Free Flight Tests (Separation/Jettison, Flight performance, OPEVAL)

# ENVIRONMENTAL IMPACT ANALYSIS

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## NATIONAL ENVIRONMENTAL POLICY ACT DOCUMENTATION

### Activities at Test Facilities

NEPA Requirement  
CATEX #9

Laboratory Tests in existing facilities

Nondestructive Field Tests

No NEPA

Destructive Field Tests

EA or EIS for some

Captive Carry Tests

CATEX #3

Free Flight Tests

EA or EIS

# ENVIRONMENTAL IMPACT ANALYSIS

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## NATIONAL ENVIRONMENTAL POLICY ACT DOCUMENTATION

### Activities on Ranges and Test Facilities

- Captive Carry Tests most likely **won't** require EA / EIS (CATEX #3)
  - Seeker and Guidance Testing
  - Flight Clearance
  - Catapult and Recovery Testing
- Free Flight Tests will require NEPA Document
  - Jettison / Safe Separation
  - Telemetry Shots with and without target
  - Life fire shots against targets (OPEVAL)

# ENVIRONMENTAL IMPACT ANALYSIS

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## PREPARATION OF NEPA DOCUMENTS

- Program Office has lead role
  - Site Managers and Site environmental office share responsibility
- Can be based upon previous documents for similar tests
  - similar test plan
  - same site (or very close)
  - similar type and extent of environmental impacts
- Program Office funds document preparation

# ENVIRONMENTAL IMPACT ANALYSIS

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## IMPACTS OF DODINST 5000.2

Program Managers will look for "most cost/effective" sites

- Least chance for potential impacts  
(pre-existing sites)
- Least cost for preparing NEPA Documentation  
(Readily available data and assistance)  
(Previously Conducted NEPA Analysis)
- Least Time required to prepare for test  
(Baseline or comprehensive NEPA Document)

# ENVIRONMENTAL IMPACT ANALYSIS

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## EFFECTS OF 5000.2 ON RDT&E COMMUNITY

- Range environmental personnel will be busier
- Increased requirement for resource management data
- Increased differentiation among facilities and increased emphasis on interoperability
- Test plans required to be completed earlier and in greater detail
- Paradigm shift - Range services marketing

# ENVIRONMENTAL IMPACT ANALYSIS

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## PLANS & ACTIONS TO BE CONSIDERED

- Establish a protocol for assisting Program Managers
  - one-stop shopping
- Develop capability for conducting EAs and EISs
  - in-house or contractor
- Include baseline NEPA documentation as part of Range Management Plan
- Initiate strategy for funding these efforts
  - pool resources



# ENVIRONMENTAL IMPACT ANALYSIS

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## Categorical Exclusions

**Categorical Exclusion #3** - Routine movement of mobile assets, such as ships and aircraft, in home port reassignments (when no new support facilities are required) to perform as operational groups, and/or for repair and overhaul

**Categorical Exclusion #9** - New construction that is consistent with existing land use and, when completed, the use or operation of which complies with existing regulatory requirements, e.g. a building or parking lot with associated discharges/runoffs within existing handling capacities, a bus stop along a roadway, and a foundation pad for a portable building within a building complex

**ENVIRONMENTAL OFFICE SUPPORT TO THE TEST MISSION**  
**Mr. Robert Wood, AFFTC**



ENVIRONMENTAL OFFICE SUPPORT  
TO THE TEST MISSION:

THE ROLE OF SOUND  
ENVIRONMENTAL STEWARDSHIP

WILLIAM W. WILSON  
Chief, Environmental Office  
USAF Test & Evaluation  
Wing



## TOPICS

- EDWARDS AIR FORCE BASE
- COMPREHENSIVE BASE PLANNING
- PARTICIPANTS AND ROLES
- GIS SUBJECT DATA
- DEMONSTRATION



## AGENDA

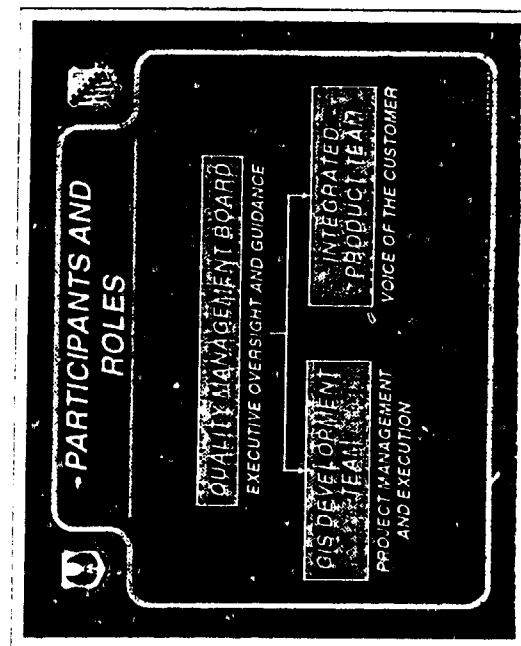
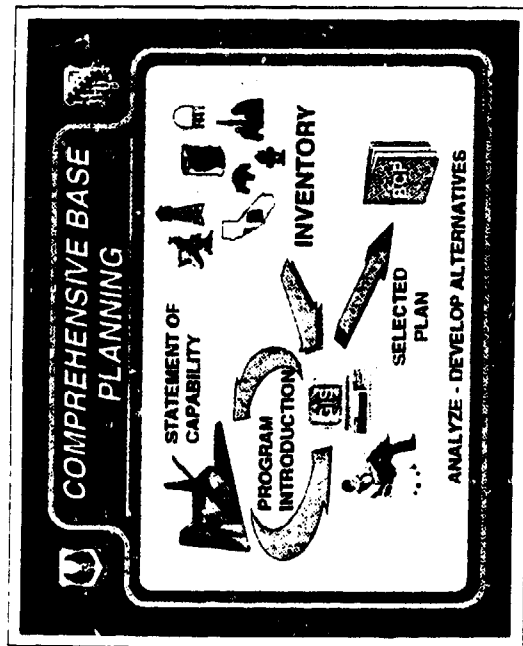
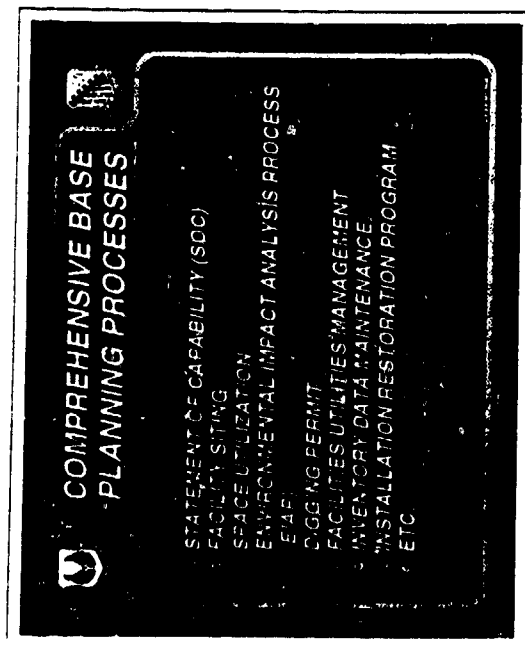
# COMPREHENSIVE BASE PLANNING



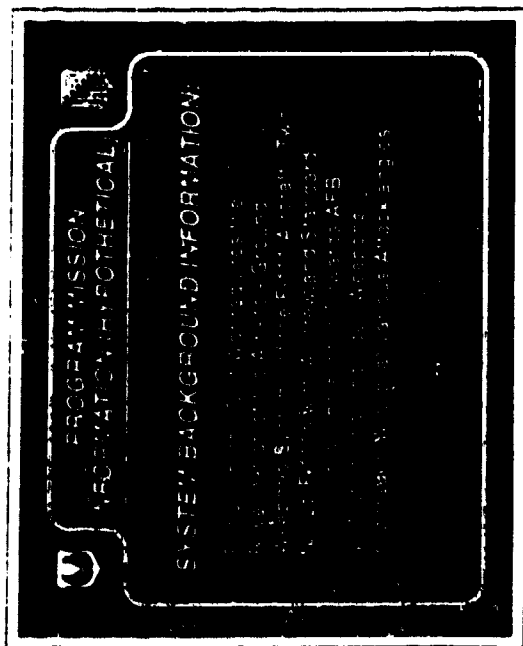
## STRATEGY ACTION PLAN 5-1

### COMPREHENSIVE BASE PLANNING

- DEVELOP BASE COMPREHENSIVE PLAN
- DEVELOP A GEOGRAPHIC INFORMATION SYSTEM (GIS) AS A TOOL TO KEEP BCP ALIVE.
- DEVELOP SINGLE PROCESS WHICH INTEGRATES AIR SPACE, LAND USE ENCROACHMENT, ENVIRONMENTAL & FACILITY PLANNING PROCESSES
- USE GIS TO FACILITATE COMPREHENSIVE BASE PLANNING PROCESSES







**VIII. CONSERVATION PANEL**

**CONSERVATION—MANAGING OUR NATURAL AND  
CULTURAL RESOURCES**

**Mr. Raymond J. Wagner, Office of the Chief of Staff, Army**





## **- CONSERVATION -**

### **MANAGING OUR NATURAL AND CULTURAL RESOURCES**

#### **OFFICE OF THE CHIEF OF STAFF, ARMY**

**PRESENTED BY:**  
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**TEST AND EVALUATION MANAGEMENT AGENCY**

42894



## ARMY ENVIRONMENTAL PROGRAM

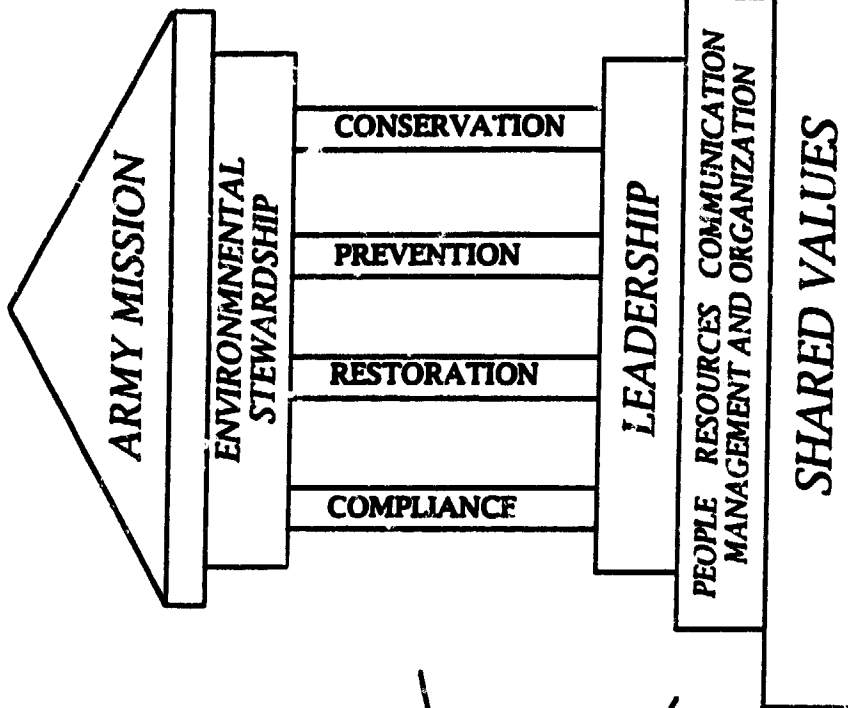
**OBJECTIVE** *To Plan, initiate, and carry out all actions and programs in a manner that will minimize adverse effects on the quality of the human environment without impairment to the Army mission.*



# ARMY ENVIRONMENTAL STRATEGY STRUCTURE

VISION

GOALS  
OBJECTIVES  
ACTION PLANS



TEST AND EVALUATION MANAGEMENT AGENCY

422094



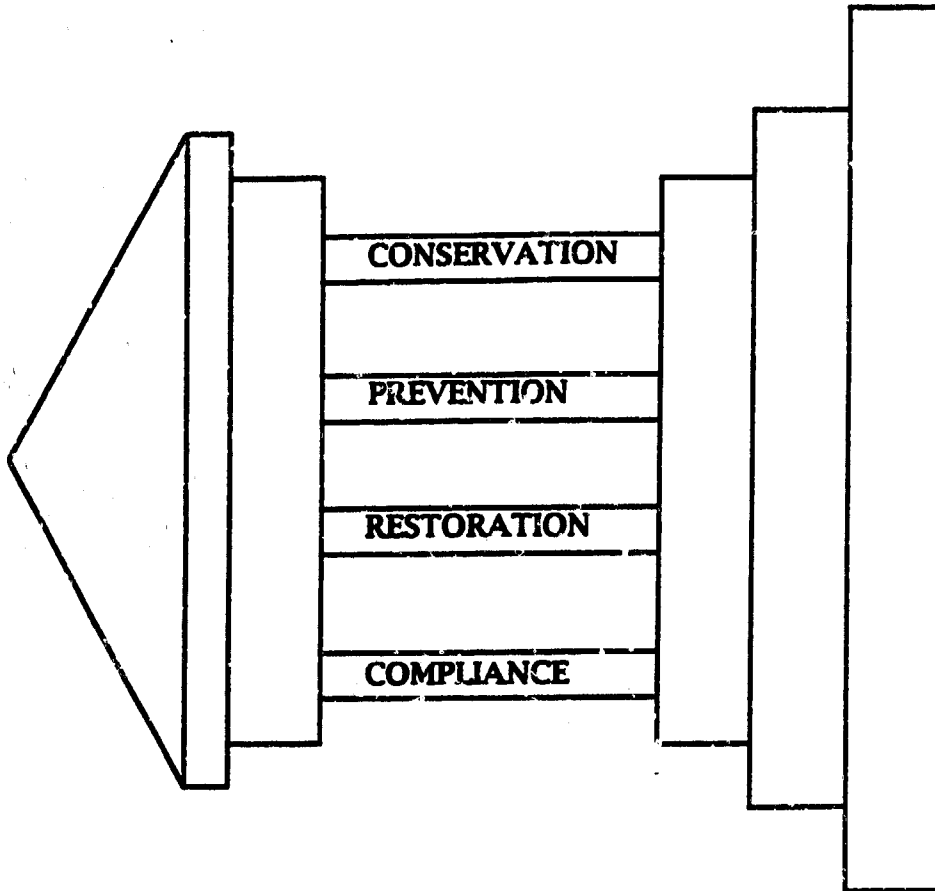
## FOUR PILLARS OF THE ARMY'S ENVIRONMENTAL PROGRAM

➤ COMPLIANCE

➤ RESTORATION

➤ PREVENTION

➤ CONSERVATION



TEST AND EVALUATION MANAGEMENT AGENCY

42504



## **CONSERVATION OBJECTIVES**

**ASSESS, CONSERVE, PRESERVE, AND RESTORE  
ECOLOGICAL RESOURCES TO MAINTAIN  
CARRYING CAPACITIES**

**BE RESPONSIVE TO GLOBAL ENVIRONMENTAL  
AND NATURAL AND CULTURAL RESOURCE  
CONCERNS**



# *WHAT DOES CONSERVATION MEAN TO THE TEST AND EVALUATION COMMUNITY?*



## POSSIBLE ANSWERS

UTILIZE T&E INFRASTRUCTURE MORE EFFICIENTLY BY  
USING LESS HAZARDOUS MATERIALS AND LIMITING  
TEST AREAS

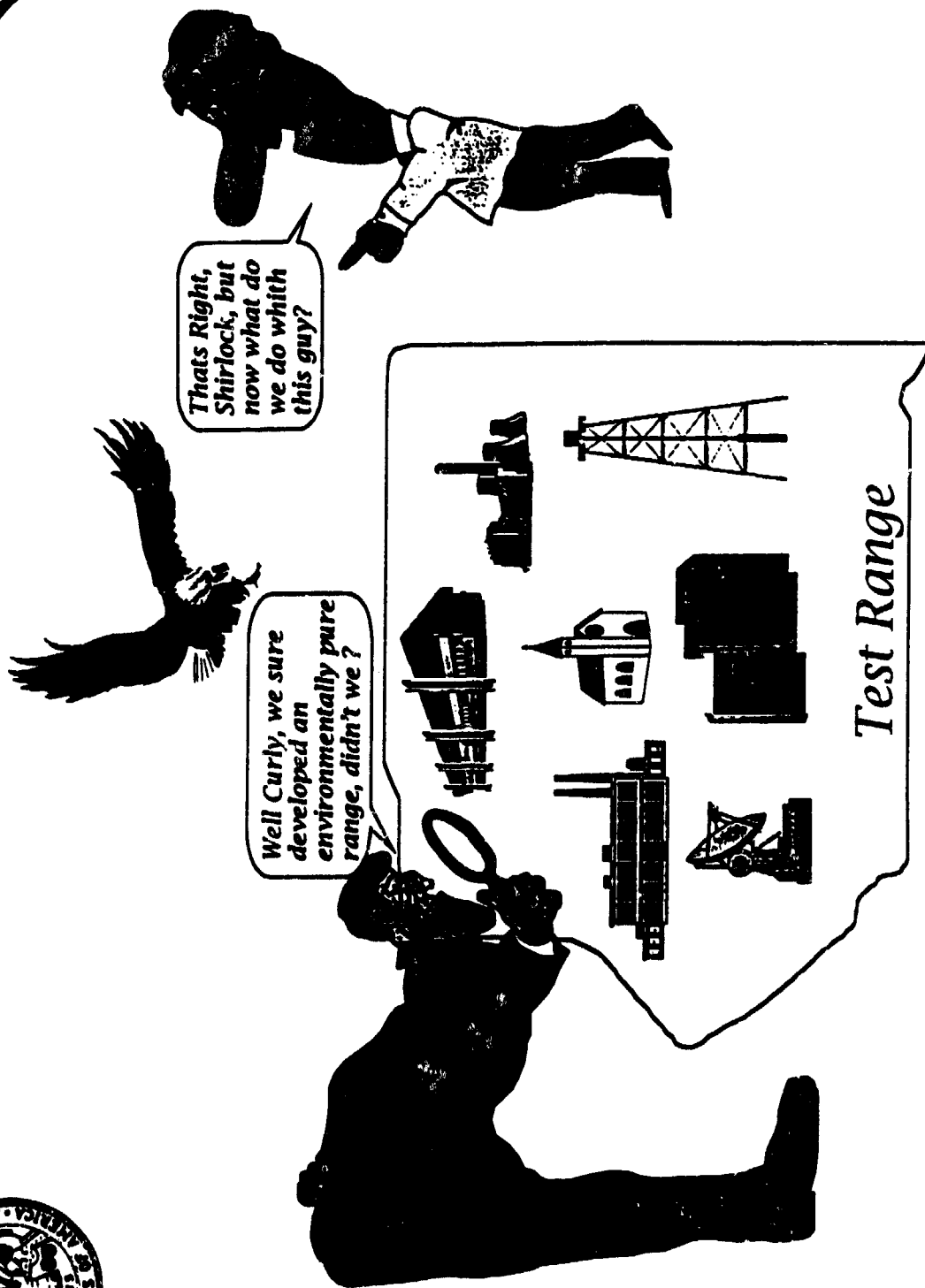
AVOID OVER-USE OR EXCEEDING RANGE CAPACITIES.  
ROTATE AREA USAGE WHEN POSSIBLE.

POLICE OURSELVES - "MESS IT UP - PICK IT UP"

RECORD THROUGH MAPPING OR CHARTING WHERE AND  
WHEN MUNITIONS, CHEMICALS, ETC HAVE BEEN USED

*Relocate*  
*Habitat*  
INITIATE FORESTATION/RE-FORESTATION PROGRAMS,  
PARTICULARLY IN REMOTE OR SELDOM USED RANGE  
AREAS

IDENTIFY ENVIRONMENTALLY SENSITIVE AREAS AND  
AVOID DAMAGING USAGE







## INTERESTS OF BOTH MUST BE MET



*We must mitigate the negative effects of our actions upon the delicate ecological balances of the environment*

*Proper planning now will prevent the need for costly and disruptive measures later.*



TEST AND EVALUATION MANAGEMENT AGENCY

4/26/94

**MOJAVE DESERT ECOSYSTEM MANAGEMENT INITIATIVE**

**Mr. Peter Boice, ODUSD(ES)/CI**

## **MOJAVE DESERT ECOSYSTEM MANAGEMENT INITIATIVE**

The Mojave Desert Ecosystem consists of over 30 million acres of land and is a national treasure of worldwide importance. Its ecological, cultural, recreational, and strategic significance are felt far beyond its boundaries and the communities that are located within it. The Department of Defense (DoD) is a major steward of these lands, managing over four million acres of the ecosystem (approximately 13 percent of the land area). The Department of the Interior (DOI), the other major steward of the ecosystem, manages roughly 15 million acres through the Bureau of Land Management (BLM) and the National Park Service (NPS).

In an effort to ensure that the ecosystem continues to be the valued resource it is today, DoD and DOI are joining as partners in a major ecosystem planning initiative for the Mojave Desert, working collaboratively with other Federal, State, county and local governmental representatives and interested publics throughout the region. This initiative will be implemented incrementally, building on ongoing ecosystem management planning efforts being conducted by DoD, DOI, and others.

### **Physical Setting**

The Mojave Desert Ecosystem encompasses an area of 47,000 square miles, covering large portions of southern California and southern Nevada, and smaller areas in northwestern Arizona and southwestern Utah (see attached map). Precipitation is scarce and extremely variable from year to year and from place to place; it averages less than 10 inches throughout most of the Mojave Desert, with the majority falling in the fall and winter months (summer rainfall can be important in some areas of the eastern Mojave Desert). The Mojave Desert is warmer than the Great Basin Desert to the north and colder than the Sonoran Desert to the south.

The major landforms of the Mojave Desert are hills and mountains, plains, and alluvial fans, plateaus, badlands, pediments, river washes, playas, and sand dunes. Elevations range from minus 269 feet in Death Valley, California, to 11,900 feet at Charleston Peak, Nevada.

Based on differences in geology, topography, and other factors, the Mojave Desert Ecosystem has been divided into three major ecosystems: the Northeastern Mojave Desert Ecosystem, the Western Mojave Desert Ecosystem, and the Eastern Mojave Desert Ecosystem.

### Biological Characteristics

The Mojave Desert has more than 2000 species of plants. Although many of these are shared with the deserts of the north and south, about a quarter of the species are endemic to the Mojave Desert; that is, they occur nowhere else in the world. Animal species are also diverse in the Mojave Desert. Death Valley National Monument alone boasts six species of fish, three species of amphibians, 36 species of reptiles, 53 species of mammals, and 258 species of birds.

Two of the more well known animal species of the Mojave Desert are the desert bighorn sheep and the desert tortoise, California's state reptile. The range of the "Mojave" tortoise population extends throughout much of southeastern California, into the northwestern part of Arizona, throughout the southern parts of Nevada, and into the southwestern corner of Utah. In the western part of its range, the Mojave tortoise occurs primarily in creosote bush, alkali sink, and yucca tree habitats in valleys, on alluvial fans, and in low rolling hills ranging from 2000 feet to 4000 feet above sea level. The eastern Mojave subpopulations occur in creosote bush-burro bush and creosote bush-yucca tree vegetation types, ranging up to 4000 feet in elevation.

### Issues

Desert ecosystems are fragile. The species found in the Mojave Ecosystem often exist at or near their physiological and/or climatological limits. Thus, they are particularly sensitive to outside influences. Even small changes can lead to drastic results.

For the past few years an intensive ecosystem management effort has been underway in the western portion of the Mojave Desert. This effort, the West Mojave Coordinated Management Plan, is being developed by State and Federal resource management agencies, counties and local municipalities, and a myriad of other interests. The planning area, representing the western third of the Mojave Ecosystem, is being impacted by its proximity to the 13 million people living in the Los Angeles basin. This area has been (and continues to be) one of the most explosive growth areas in the country, placing increasing demands on the West Mojave and the natural habitats it contains. These demands are disruptive to natural systems, wildlife, and the habitat upon which they depend, resulting in the listing of more species as endangered and threatened. Currently, the area contains 23 Federal and State listed threatened or endangered species, including California's state reptile, the desert tortoise, and 111 special status species, including 57 Federal candidate species.

DoD controls more than one-fourth of the West Mojave, and conducts most of its large-scale unit training exercises and major weapons testing in this area. By actively participating in the Mojave Ecosystem Initiative, DoD wants to continue to protect the wealth and diversity of species and habitats found on DoD lands while at the same time managing these lands to ensure our continued ability to conduct our military mission. DoD also wishes to become a full partner in this and other efforts, working with other Federal, State, and local agencies in multi-species, multi-habitat, multi-jurisdictional planning.

BLM and NPS, both DoI agencies, control over a third of the Mojave. Private landowners area also a major consideration.

Among the wide range of issues which may arise from these patterns of land ownership and use are threatened and endangered species management, habitat protection, archeological sites, access to sacred sites, fire management, cave protection, soil erosion, conversion from native to exotic species, noise, dust, historic properties and other cultural resources, incomplete resource inventories, lack of current integrated natural resources management plans, rights-of-way, grazing, hunting, mining, water rights, geothermal energy resources, and wild horse and burro management.

#### Significant Ongoing Efforts

- In 1976, with the passage of the Federal Land Policy Management Act (FLPMA), Congress mandated BLM to prepare and implement a comprehensive, long-range plan for the management of the California Desert Conservation Area (CDCA). In 1980, the CDCA Plan was completed with the participation of other Federal -- including DoD, State, and local agencies, and interested public. The plan covers 12 million acres of public lands and includes lands within the Mojave and Sonoran Desert ecosystems. The CDCA Plan is a strategic framework on which other more specific planning efforts can be based.

- In September 1991, seventeen Federal and State agencies and representatives from the State's county supervisor's associations signed the California Agreement on Biological Diversity, a statewide memorandum of understanding to conserve regional biodiversity. Federal signatories include BLM, NPS, the Fish and Wildlife Service, the USDA Forest Service and Soil Conservation Service. State signatories include the California Resources Agency, the California Department of Fish and Game, the Department of Forestry, and the State Lands Commission, the Department of Conservation, and the University of California. The Agreement created an Executive Council on Biological Diversity and established a framework by which State and Federal resource managers, local governments, and the public could discuss and establish collaborative conservation planning and management programs on an ecosystem or local scale. Today, there

are dozens of these programs underway across the State, including the *West Mojave Ecosystem Coordinated Management Plan* in the California Desert.

- The *West Mojave Ecosystem Coordinated Management Plan* has been underway for about two years. Numerous consultations and public meetings have been held to develop this plan, aimed at preserving the biodiversity of 9.4 million acres in the West Mojave Desert Ecosystem. The participants in this effort include seven Federal agencies, led by BLM and including Fort Irwin National Training Center, Naval Air Weapons Center China Lake, Edwards Air Force Base, and Twentynine Palms Marine Corps Base; four State agencies; three counties; eleven cities; and numerous representatives of interest groups and industry.

The objectives of the West Mojave Plan are to enhance biodiversity in the region to provide for the recovery of the threatened desert tortoise, and 22 other Federal or State listed threatened and endangered species, as well as 111 other sensitive wildlife species. Its goal is to streamline State and Federal permitting processes under the Endangered Species Act, the California Environmental Quality Act, and the National Environmental Policy Act, to provide for the necessary economic development and community expansion in this heavily populated area in balance with the natural environment.

- Edwards AFB has been working for several years with BLM to exchange lands east of the base for critical desert tortoise habitat in other parts of the desert. While the desert tortoise has benefitted from these lands trades, or land tenure adjustments, so has the space shuttle which now has a safer flight path for landing at Edwards due to the consolidation of Federal lands.

- The Navy's Chocolate Mountains Gunnery Range has proposed to sign onto a similar coordinated management plan covering the northern and eastern Colorado Desert further south and east of the West Mojave to also help in the recovery of the desert tortoise and other threatened, endangered, or sensitive species in that region and still allow for economic development on private lands.

- Working with BLM and the U.S. Fish and Wildlife Service, the Army modified its land acquisition project in 1993 in order to avoid conflict with the desert tortoise and its habitat. This regional perspective enabled the National Training Center at Fort Irwin to receive three no jeopardy biological opinions concerning the desert tortoise.

- DoD has also initiated a number of ecosystem initiatives through its Legacy Resource Management Program. For example, Naval Air Weapons Station, China Lake is developing a comprehensive native spring characterization study of its 50 springs. This interagency effort involves BLM, the U.S. Fish and

Wildlife Service, the U.S. Geological Service, and the California Fish and Game Department. China Lake is also conducting Legacy-funded projects on revegetation, habitat management for the threatened Inyo Towhee, and a bat survey of the approximately 19 species found on the installation.

- Similar efforts have also been initiated in other States. In Nevada, for example, BLM has initiated major land management planning efforts in response to demands for community expansion and preservation of sensitive species habitat. The Nellis Air Force Range Resource Plan covers 2.2 million acres of withdrawn lands within the Nellis Air Force Range and directs the level of management of natural and cultural resources by BLM. It was developed in cooperation with Nellis Air Force Base and with extensive involvement by the public. Another major resource management planning effort is being done in BLM's Las Vegas District.

- A Tortoise Management Oversight Group was established in the late 1980s to oversee the implementation of a Tortoise Rangeland Plan that covers most of the Mojave Ecosystem in four states: California, Nevada, Arizona, and Utah. It also oversees and coordinates the Recovery Plan for the Desert Tortoise. Membership is composed of the four states' fish and game agencies, three Fish and Wildlife regional offices, and four BLM state directors.

#### Recommended Actions

In an effort to ensure the Mojave Desert remains the valued resource it is today, DoD and DoI are joining as full partners and initiating a major ecosystem planning initiative for the Mojave Desert. The effort will be conducted with the full participation of other Federal, State, and local agencies and interested publics. This initiative will be implemented incrementally, with the initial emphasis being placed on the West Mojave Desert Ecosystem. To this end, DoD will undertake the following preliminary actions:

- Designate Department of the Army as lead for the military in developing the Mojave Initiative. It is proposed that the Los Angeles District Corps of Engineers be assigned on-site military coordination, and that a field office be established in Barstow, California by June 1. Initial efforts would be focused on identifying existing projects and opportunities within DoD, and improving internal coordination. A second short-term goal will be to establish a dialogue with the other Federal land owners in the region, in particular with the BLM. DoD will also consider establishing an ecosystem information clearinghouse for the region.

- Initiate actions to endorse the California Agreement on Biological Diversity.

- Examine where and how to apply funding through the Legacy Resource Management Program in support of the Mojave Ecosystem Initiative. Emphasis will be on projects with tangible results. Actions should support sustainable economic development by meeting the needs of the present without compromising the ability of future generations to meet their own needs.

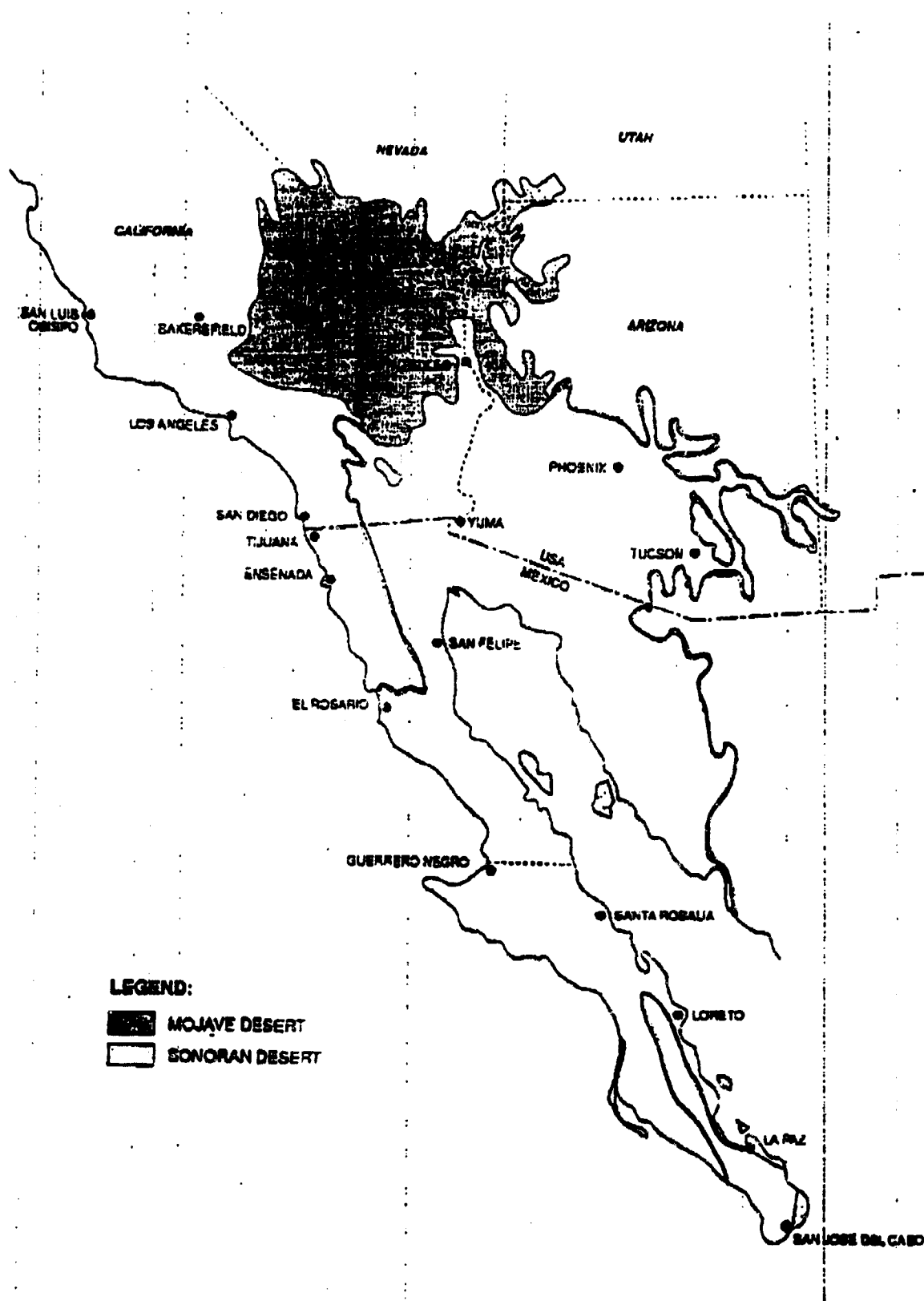
Once initial lines of communication have been established, DoD and DoI will:

- Evaluate how existing efforts such as the West Mojave Ecosystem Coordinated Management Plan and the Desert Tortoise Management Oversight Group can be most effectively integrated with the Mojave Ecosystem Initiative.
- Investigate the feasibility of establishing a Reinvention Laboratory in the West Mojave Ecosystem under the Vice President's National Performance Review.
- Explore additional areas where collaborative ecosystem management efforts would be produced.
- Evaluate how to integrate the work of the National Biological Survey into the Initiative.

Our longer-term goal is to integrate the principles and guidelines established by the White House Ecosystem Management Task Force into the Mojave Initiative. Again, starting with the West Mojave, we will focus on efforts to:

- Restore and maintain the health, sustainability, and native biodiversity of the Mojave Ecosystem.
- Develop a shared vision of ecosystem health for the Mojave. The vision should take into account existing social and economic conditions in the ecosystem and identify ways in which all parties can contribute to achieving ecosystem goals.
- Develop ecosystem priorities and reconcile conflicts.
- Develop collaborative approaches to work toward improved ecosystem health.
- Employ and share the best scientific information and technologies available.
- Use benchmarks to monitor and evaluate ecosystem outcomes.
- Use adaptive management.





**SUBMITTAL GUIDELINES FOR FY95 LEGACY PROPOSALS**

**Mr. Peter Bolce, ODUSD(ES)/CI**



UNITED STATES  
DEPARTMENT OF DEFENSE  
*LEGACY RESOURCE MANAGEMENT PROGRAM*

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**SUBMITTAL GUIDELINES**  
**for Fiscal Year 1995**  
*Legacy Proposals*

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Office of the  
Deputy Under Secretary of Defense (Environmental Security)

*Legacy Resource Management Program*  
**Submittal Guidelines for Fiscal Year 1995**  
*Legacy Proposals*

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# **SUBMITTAL GUIDELINES**

## **for Fiscal Year 1995**

### ***Legacy Proposals***

#### **1. FY 1995 *Legacy* Objectives**

Our primary objectives this year are to give priority to projects that:

- a. Conduct natural and cultural resources baseline inventories, coordinating with your state's Natural Heritage Program for natural resource inventories or with your State Historic Preservation Office for cultural resources.\*
- b. Develop or update resource management plans that integrate natural and cultural resources stewardship or that incorporate resource stewardship into other base/installation activities such as master planning, in support of the military mission.\*
- c. Preserve/restore/conservе significant, sensitive, or endangered resources, especially in a way that integrates management of cultural and natural resources.\*
- d. Participate in regional stewardship efforts such as the White House Ecosystem Management Initiative, Partners in Flight, Chesapeake Bay Initiative, Coastal America, Heritage Areas and Trails, National Biological Survey, Historic Preservation Initiatives, and others.
- e. Promote partnership\* efforts to share resources and exchange information.
- f. Demonstrate the transfer of beneficial technologies to meet valid natural and cultural resources management requirements.
- g. Contribute to Administration-supported international efforts to manage natural and cultural resource protection and information sharing.

\* Refer to Appendix A for specific requirements under objectives and themes.

## **2. FY 1995 *Legacy* Themes**

Each proposal, by statute, must address at least one of *Legacy's* nine Legislative purposes (see Appendix B).

For FY 95, the following areas are of particular interest:

- a. Natural Resources initiatives include:
  - (1) ecosystem management, protection, and restoration;
  - (2) threatened and endangered species;
  - (3) neotropical migratory birds;\*
  - (4) coastal, marine, and aquatic systems.
- b. Cultural Resources initiatives associated with:
  - (1) Native Americans, including Native Hawaiians, Alaska Natives, Micronesians, and others;
  - (2) curation and collections management of artifacts;
  - (3) properties eligible or potentially eligible for the National Register of Historic Places, especially those related to World War II and settler communities.
- c. Integration of Natural and Cultural Resources:
  - (1) planning and data management;
  - (2) training and awareness.

\* Refer to Appendix A for specific requirements under objectives and themes.

### 3. Submittal Requirements

- a. Military installations and activities must submit proposals through their Chains of Command.
- b. All proposals must be received by the appropriate individual Services headquarters as directed.
- c. All proposals prepared by outside agencies must be endorsed by military or DoD proponent. Installation level project must be endorsed by the installation, base, or garrison commander. DoD-wide proposals supported by an installation/base or Service must be submitted to the military Service proponent with copies to ODUSD(ES)/CI. Other DoD-wide proposals should be submitted directly to ODUSD(ES)/CI.
- d. Application formats must be completed in full. Incomplete proposals will be rejected.
- e. Projects involving more than one installation should designate a "lead" installation and be submitted by that installation.
- f. Proposals should be submitted on disk, as detailed in the memorandum transmitting this document. A programmed disk will be distributed to military installations, through their Major Commands/Claimants, in mid-May, 1994. Other project proponents should call the appropriate *Legacy* office (see appendix C) to request a disk. As you can see from the proposal format at the back of this document, the information requested for FY 95 differs slightly from last year. You may begin entering proposals on the FY 94 disks from last year, however, you must transfer this work to the FY 95 disk when you receive it, and be sure to revisit all work and provide the new information. Remember, incomplete proposals will be rejected.

### 4. Proposal Evaluation

- a. All proposals will be evaluated by in-house personnel and must:
  - (1) Be compatible with the military mission;
  - (2) Relate to *Legacy's* FY 95 objectives and the *Legacy* legislative purposes (see Appendix B);
  - (3) Provide tangible products, results and benefits from a single year's funding that will directly contribute to management of DoD's natural and cultural resources;
  - (4) Comply with all submittal requirements.

5. **Proposals for the following types of projects are ineligible for *Legacy* funding:**
- a. Those more suitably funded through other sources, such as non-appropriated funds, military construction, or environmental clean-up.
    - a.1 Inventories and protective measures required to complete satisfactory NEPA documents or other actions required by BRAC if other funding sources are available. In general, *Legacy*-type projects on operational bases listed for closure should be funded by BRAC. However, projects on operational bases listed for closure should be eligible for *Legacy* if they meet other *Legacy* funding criteria. Projects required to protect and preserve resources under immediate threat may be funded, provided there is ongoing resource protection by DoD or agreed to by a new land owner or land holder. Projects at closed bases, or projects driven by closure implementation are not eligible for *Legacy* funds.
  - b. Compliance projects, i.e., those required to correct existing legal deficiencies under current regulations and laws;
    - b.1 Inventories required by law in response to proposed Federal action, such as requirements under Section 106 of the National Historic Preservation Act or the Endangered Species Act.
  - c. Routine operation, repair, and maintenance of buildings and grounds. Planting projects must clearly identify vegetation to be planted. For example, if the primary purpose of an urban tree planting project is habitat improvement for songbirds or other species in jeopardy, or to protect unique ecosystems, it is eligible for *Legacy* funding. Routine landscaping is not eligible;
  - d. Projects whose primary purpose is to promote game management;
  - e. Basic research (*Legacy* may fund applied research when in support of program objectives and themes);
  - f. Restoration and rehabilitation of buildings, structures, or objects not eligible for the National Register of Historic Places.
  - g. Static displays, unless "one-of-a-kind" or demonstrating new techniques.
6. **Project Reporting Requirements (see *Reporting Requirements for Legacy Projects* available from your individual Services headquarters)**



**7. Statement of Installation Support**

If a proposal is submitted for work on an installation, and the proposal did not originate at that installation, documentation of support signed by the installation, base, or garrison commander, or designated representative, must be submitted.

**8. Projects Outside the United States and its Territories**

Proposals may be submitted for projects outside the United States and its territories provided they do not infringe upon the host country's rules and regulations and have been coordinated with the appropriate authorities in the host country.

## FORMAT FOR LEGACY PROPOSALS

(Proposals should be submitted on disk. Please refer to page 3, part f of this document for instructions on submitting proposals by disk.)

For Legacy  
HQ Use Only

Please provide a two to four page proposal in the following format. Additional supporting documentation such as proposal significance, more detailed approach, background information, and qualifications of contractors, researchers etc. may be attached as appropriate.

**DoD LEGACY PROJECT NUMBER:** (Applies to previously funded projects only; otherwise, leave blank. Attach latest quarterly report if previously funded)

**PROJECT NAME:** (65 characters or less. If the project has been funded previously, please use the old project name)

**PROJECT LOCATION:** (Installation name(s), Location(s))

FUNDING:*	FY91	FY92	FY93	FY94	FY95	FY96	FY97	TOTAL
(\$1000's)	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx	\$xxx	\$xxxx

**PRIORITY:** Installation \_\_\_\_ out of \_\_\_\_ Command/Claimant \_\_\_\_ Service \_\_\_\_

(Installations assign a priority number based on all proposals submitted by that installation, regardless of resource type. Command/Claimant and Service will consolidate proposals and prioritize with letter grades.)

**LEAD SERVICE:** Army, Navy, Marine Corps, Air Force

**BENEFITTING SERVICE(S):** (Service(s) directly benefiting from project: Army, Navy, Marine Corps, Air Force; list all that apply)

**PROJECT CATEGORY:** List major focus/foci only: (DC, PRM, PA)

DC: Data Collection - surveys or inventories

PRM: Preservation/Restoration/Management of Resources - includes development of stewardship plans and activities to: protect World War II/Cold War documents and properties; repair, re-establish integrity of degraded wetlands, coastal dune systems, riparian areas, historic buildings, historic districts, archeological sites, conserve threatened and endangered species, and others.

PA: Public Awareness/Training - workshops, informational brochures, historic/nature trails,

**RESOURCE TYPE:** (Biological, Earth, Cultural/Historic; list all that apply)

**OBJECTIVE:** (State the goals(s) and objective(s) of this project).

**APPROACH:** (Outline the method(s) used to accomplish the objective(s)).

\* For information purposes only, indicate: any funding received for this project in Fiscal Years 91 through 94; projected out-year funding needs. Out-year funding is not guaranteed.

**FY 95 PRODUCT(S)/RESULT(S):**

**PARTNERS:** (List all known or expected partners, giving a brief summary of the nature and extent of each partner's contribution. Partners are other governmental agencies outside of your service, non-profit groups, universities and other institutions of higher learning, and other similar organizations. They may contribute any combination of expertise, labor, funding, and materials).

**BENEFITS:** (Describe all benefits to the military which will be provided by the project).

**DETAILED PROJECT SCHEDULE AND BUDGET:**

Each phase of the proposed project should be presented separately. FY 95 *Legacy* funds must be obligated by September 30, 1995, and may be disbursed over the next five fiscal years, ending September 30, 2000.

For each phase, please provide: (see sample on next page)

description of the activities and products (if any) of the phase,  
start date,  
intermediate milestones expressed as months from the start date,  
phase completion expressed as months from start date,  
budget for the phase including, labor, materials, travel, and overhead for in-house and  
contracted services. Indicate latest date funds can be received for project execution.

**Sample Detailed Project Schedule and Budget:**

(In this example the proposal objective is to obtain and evaluate data on the impacts of military-unique activities on T&E species and to identify appropriate management practices that are designed to mitigate adverse impacts.)

- Phase I:** Literature Review  
Start date: date of funding receipt  
Completion: 4 months from receipt of funding  
Budget: \$XXX contracted labor  
\$XXX contracted travel  
\$XXX overhead
- Phase II:** Study designs  
Product: Protocols  
Start date: 4 months from receipt of funding  
Intermediate milestone: Draft protocol: 7 months from start of funding  
Completion: 9 months from receipt of funding  
Budget: \$XXX in-house labor  
\$XXX in-house overhead
- Phase III:** Demonstration of proposed protocols  
Product: Report on effectiveness of protocols  
Start date: 8 months from receipt of funding  
Intermediate milestone: completion of field tests: 12 months from start of funding  
Completion: 15 months from receipt of funding  
Budget: \$XXX in-house labor  
\$XXX contracted labor  
\$XXX in-house travel  
\$XXX in-house overhead  
\$XXX materials purchased  
\$XXX miscellaneous (explain)

**Please aggregate FY 95 budget details listed above:**

<b>ITEM</b>	<b>FUNDING (\$)</b>	<b>% FY 95 TOTAL</b>
In-house Administration		
In-house Labor		
In-house Travel		
In-house Materials		
In-house Overhead (indirect)		
Miscellaneous In-house (describe)_____		
Contracted Labor		
Contracted Materials/Rentals		
Materials Purchased		
Other Travel		

(describe) \_\_\_\_\_  
Miscellaneous  
(describe) \_\_\_\_\_

**TOTAL**

**LEGACY PURPOSES SATISFIED:** (List, by number only, the purposes the project will directly satisfy. See Appendix B for the nine legislative purposes).

**CONTACT:** (List technical and financial points of contact [POC]. Technical POC is project manager. Financial POC is budget person to whom funds are directed. Include names, mailing addresses, and telephone and FAX numbers, including DSN numbers.)

## Appendix A

### SPECIFIC REQUIREMENTS FOR FY 95 OBJECTIVES AND THEMES

#### Inventories of natural and cultural resources Pg.1.1a

Your proposal should demonstrate that natural resource inventories will be coordinated with your state's Natural Heritage Program and cultural resource inventories use the Cultural Resources Information System (CRIS) as a guide to data collection and compilation. (Your Legacy office can put you in touch with your state's Natural Heritage Program. Information on the CRIS system is available from Joan Cole, USACERL, at 1-800-872-2375 or E-mail: JCOLE@OSIRIS.CSO.UTUC.EDU)

#### Development or update of resource management plans Pg.1.1b

Your proposal should briefly discuss the resource inventories upon which you are basing your management plan.

#### Preservation/restoration/conservation of significant, sensitive, or endangered resources Pg.1.1c

Your proposal should demonstrate that a maintenance plan will be in place for this resource after your project is completed. If a maintenance plan has not been submitted, please include development of such a plan in your proposal. Legacy will consider funding work on historic properties only if they are on or eligible for the National Register of Historic Places.

#### Neotropical migratory birds Pg.2.2a(3)

To ensure standard data collection and analysis, monitoring efforts should be coordinated with the Center for Bird Populations and your regional Partners in Flight survey and monitoring community. (For information on these programs, call Joe Hautzenroder, Naval Facilities Engineering Command, at 202-433-4966 or AV 288-4966)

#### Partnerships Pg.1.1e

Partners are defined as organizations or individuals who contribute to a project through donations of money, expertise, labor, or materials. They can include other governmental agencies outside of your Service, non-profit groups, contractors, museums, and institutions of higher learning.

Appendix B

**LEGACY LEGISLATIVE PURPOSES**

1. To establish a strategy, plan, and priority list for identifying and managing significant biological, geophysical, cultural, and historical resources existing on, or involving, all Secretary of Defense lands, facilities, and property, and including lands, facilities, and property owned and/or managed by the National Guard in each of the fifty states and territories.
2. To provide for the stewardship of all Department of Defense controlled or managed air, land, and water resources.
3. To protect significant biological systems and species including, but not limited to, those contained on the Federal endangered list and those which are candidates for that list.
4. To establish a standard Department of Defense methodology for the collection, storage, and retrieval of all biological, geophysical, cultural, and historical resource information which, in the case of biological information, should be compatible with that used by state Natural Heritage Programs.
5. To establish programs to protect, inventory, and conserve the artifacts of Native American civilization, settler communities, and others deemed to have historical, cultural, or spiritual significance.
6. To establish inventories of all scientifically significant biological, geophysical, cultural, and historical assets of Department of Defense lands. In addition to the specific attributes of the asset, these inventories are to catalog their scientific and/or cultural significance as well as their interrelationship to the surrounding environment, including the military mission carried out on the land upon which they reside.
7. To establish programs for the restoration and rehabilitation of altered or degraded habitats.
8. To establish educational, public access, and recreation programs designed to increase public appreciation, awareness and support for these national environmental initiatives.
9. To establish and coordinate by Fiscal Year 1993 with other federal departments, agencies, and entities a project to inventory, protect, and conserve the physical and literary property and relics of the Department of Defense, in the United States and overseas, connected with the origins and the development of the Cold War, which are not already being carried out by other capable institutions or programs

Appendix C

LEGACY POINTS OF CONTACT

Department of the Army  
Assistant Chief of Staff for Installation  
Management  
ATTN: DAIM-ED-N (Legacy)  
600 Army Pentagon  
Washington, D.C. 20310-0600  
TEL: 703/614-7678  
FAX: 703/614-7655  
DSN: 224-7678

Department of the Navy  
ATTN: CNO Code 44EP3  
(Glen Alderton - Cultural Rscs.) and/or ATTN:  
CNO Code 456  
(Lorri Schwartz - Natural Rscs.)  
200 Stovall Street, Room 10N67  
Alexandria, VA 22332-2300  
TEL: 703/325-7353 - Cultural  
703/325-0427 - Natural  
FAX: 703/325-2261 or 325-2839  
DSN: 221-7353 or 221-0427

Headquarters, United States Marine Corps  
ATTN: HQMC-LFL (Jim Omans)  
2 Navy Annex  
Washington, D.C. 20380-1775  
TEL: 703/696-0865  
FAX: 703/696-1020  
DSN: 226-0865

Department of the Air Force  
HQ-USAF/CEVP, Room 5B269  
ATTN: Paul K. Williams  
1260 Air Force Pentagon  
Washington, D.C. 20330-1260  
TEL: 703/695-6118  
FAX: 703/695-8943  
DSN: 225-6118

Office of the Deputy Under Secretary of  
Defense (ES)/CI  
ATTN: Mary Bandziukas - Cult. Rscs. and/or  
Jacquelyn M. Howard - Nat. Rscs.  
400 Army Navy Drive, Suite 206  
Arlington, VA. 22202-2884  
TEL: 703/604-5805 - Cultural  
703/604-6735 - Natural  
FAX: 703/604-5934



**YUMA PROVING GROUND'S CONSERVATION AGENDA**  
**Mr. Lance VanderZyle, YPG**

**U.S. ARMY YUMA PROVING GROUND  
CONSERVATION AGENDA  
MR. LANCE VANDERZYLE**

In the old days, Department of Defense conservation = hunting + fishing + logging + grazing + farming + cemeteries + war memorials. Yuma Proving Ground really never had any of these. Obviously, a lot of the old paradigms have changed. The Department's conservation agenda has mushroomed. So has Yuma Proving Ground's appreciation of stewardship for its hot desert ecosystem and unique cultural heritage. Yuma Proving Ground has interpreted its conservation role to include mission interface, regulatory compliance, management strategies, and community outreach. We promote awareness within the test community in order to help testers to identify important natural and cultural resources and to avoid doing harm.

Yuma Proving Ground is an environmental test facility which approximates desert conditions world-wide. The Proving Ground provides conditions such as dust that stress filters, thorns that puncture tires, and landscapes that challenge detection.

We comply with the numerous statutes and regulations, such as the National Historic Preservation Act and the Endangered Species Act, that require us to survey our natural and cultural resources and to coordinate our programs. Laws and regulations are multiplying just as fast in the conservation area as they are in other environmental arenas.

Like everyone else with large acreage and a small staff, Yuma Proving Ground maximizes its resources where possible. One of our proposed projects, at White Tanks, is designed to take a holistic management approach. The White Tanks site has been nominated for listing as a National Historic Landmark. Its geology is unique and noteworthy. It is also a significant site for watching wildlife.

As part of our natural resources program, Yuma Proving Ground is implementing the Army's Integrated Training Area Management (ITAM) approach. We have implemented land condition-trend analysis (LCTA) to quantify conditions at the Proving Ground. We will be using GRASS, an Army-developed geographic information system, to monitor environmental conditions and aid in land-use decision making. In addition, we utilize land rehabilitation and planning maintenance (LRAM) to fix our problems.

The cornerstone of our program is keeping the descendants of our former occupants and our current neighbors aware of how we are safeguarding their past. We share our resources and responsibilities with vested interest groups and volunteers who in turn contribute to our conservation mission. This is something the Department of Defense's Legacy Resource Management Program has allowed us to take to new heights. Our first Legacy project was a prototype bighorn sheep-collection structure that was built by volunteers.

Thank you for the opportunity to discuss a sampling of our initiatives that contribute to meeting our conservation agenda.

**EGLIN AIR FORCE BASE NATURAL RESOURCES  
MANAGEMENT PROGRAM  
Mr. Rick McWhite, Eglin AFB**

-Rick briefs:

Good morning. The mission of Eglin's Natural Resources Management Program is to support the Air Force mission through responsible stewardship of the installation's natural resources. I would like to take a moment to discuss the concept of stewardship as it applies to public land management. As defined by Webster, a steward is someone entrusted to care for the property, belongings or finances of another. Opinions as to what constitutes proper or responsible stewardship of public lands have obviously changed over time. We recognize that the public wants a land management philosophy responsive to human needs, as well as to the realities of native species and complex ecosystems. Traditionally, natural resource programs selected and managed single species, based on their perceived importance as products or commodities, or their status as threatened or endangered. We have found a better way to manage Eglin's natural resources.

Ecosystem management is a landscape level approach to managing viable populations of all native species, restoring and maintaining ecological structures, composition and processes, and

providing for human needs. Ecosystem management, by necessity, is an information-driven process, which requires various natural resource programs be integrated and focused toward common goals. We spent 18 months developing a long-range, strategic, ecosystem-based management plan, which has been widely heralded as a role model for the management of public lands. As part of this planning process we hosted 15 workshops involving 75 scientists representing a wide range of disciplines. The adaptive management process enables us to integrate management activities with on-going scientific investigation to provide reliable information and identify trends and causal relationships. Information obtained from our adaptive management program will be used to evaluate, and or modify, our management operations and techniques. We will also gain a better understanding of our native ecosystems, which will enable us to better predict ecosystem responses to our management.

I will give three examples to illustrate the success of our adaptive management program.

We recently completed a three and a half year survey of approximately 200,000 acres of suitable habitat for the endangered Red-cockaded woodpecker. The RCW is a good indicator of ecosystem health in

the longleaf pine ecosystem. This survey identified Eglin as having the fourth largest population of this species in the world. Data obtained from the survey enabled us to begin a population monitoring program. This progress involved banding RCWs monitoring cluster sites, and initiating research to evaluate forage availability. This research provided Eglin with one of the largest home range and foraging data sets for this species in the country. Based upon demographic information, it became clear that management activities for RCW and the sandhills ecosystem would need to be prioritized. We directed our control burning program to improve habitat quality. In addition, we also initiated the creation of three cluster sites and stabilized 22 existing sites, using artificial cavity technology to increase population growth. These accomplishments would not have been possible without the cooperation and participation of numerous partners.

In 1993, we initiated a 3-year project to survey, delineate, and qualitatively rate the condition of Eglin's natural communities.

The first phase was focused on GAP. GAP is a nationwide effort to map habitat types and overlay species distribution data identifying

critical areas for conservation. Eglin was one out of many cooperating agencies who participated in this effort. One product was the development of a vegetative cover map derived through the process of LANDSAT imagery.

The second phase is classifying the present condition of natural communities relative to their perceived natural state, potential for restoration, and the level of management intensity required to achieve restoration. We developed and published in our Natural Resource Management Plan a four tiered land classification system. Portions of vegetative communities which are in, or closely approximate their natural state, are identified as Type 1 areas. These areas have experienced relatively few disruptive events. Management is predominantly in the maintenance category. Other land areas are ranked in descending order of natural quality as either Type 2, 3, or 4.

Management of these areas involves a greater amount of hands-on restoration over extended periods of time. Our restoration efforts are increasing overall ecological integrity and adding to the resilience of Eglin's ecosystems. This effort will provide the defense mission a greater degree of flexibility, while maintaining our



stewardship responsibilities. This project, which is identifying the highest quality natural areas remaining on Eglin, and in some cases the State of Florida.

The last example of our adaptive management approach, is our ecological monitoring and modeling program. This is a pioneering effort to link management activities to ecosystem health and integrity. The objectives of this program are to provide feedback to management, and monitor the health of our ecosystems. Responses to experimental restoration treatments are being measured in selected plant, invertebrate, and vertebrate species. The outcome will be the development of best management practices for the restoration of Eglin's sandhills, as well as the creation of a long-term monitoring and modeling program to assess and predict the health of Eglin's ecosystems. To the best of our knowledge, this is the first, large-scale attempt to monitor ecological health in terrestrial systems.

Our various programs have accomplished much in conservation, restoration, and preservation during the last three years. Like many other large public land areas, we provide a wide-range of quality outdoor recreational experiences. We have further

expanded this program to educate our user groups on Eglin's ecosystem-based management program and other conservation issues. Surveys were developed to better understand the public's recreational desires. Approximately 270,000 acres are open for public recreation and annual use is estimated at 410,000 man days. The red areas on this map depict safety buffer zones and are closed to recreation. Our outdoor recreation program has sold over 14,000 permits each year for various activities such as hunting, fishing, camping, and other general recreational activities such as hiking, bird watching, canoeing, picnicing, and swimming. Each year, we publish the Hunting, Fishing and Outdoor Recreation rules and regulations, in a booklet format, to help make the public aware of the recreational opportunities available on Eglin Air Force Base.

Our Fish and Wildlife management program monitors a variety of wildlife populations, regulates harvest to ensure sustained yield, and provides feedback to evaluate management activities and ensure conservation strategies are effective.

Eglin contains some of the highest quality natural areas, including what is thought to be the largest stand of old growth longleaf pine

remaining in the world. Our Forestry Management program ensures timber harvest is within the limits of the natural system. In the past three years, 32 timber management contracts have been administered, resulting in the harvest of over 300,000 tons of forest products. Funds generated were in excess of \$3.7 million dollars, making this the largest forestry program in the Air Force.

Other conservation initiatives involving Eglin include Coastal America, Watchable Wildlife, Partners in Flight, and the Gulf of Mexico project. We have received funding from the Legacy program to conduct an ecological study of Cape San Blas Florida, a critically important area for migratory birds and nesting sea turtles. This 500-acre radar site is located 100 miles east of the main Eglin reservation. We have also received Legacy funding to conduct neotropical migratory bird research and construct a wildlife observation tower.

Our total Legacy funding has totalled almost \$2 million dollars for nine different projects.

A number of activities have been conducted for the purpose of restoration. Our reforestation program has restored over 6,700 acres of longleaf sand hills to native longleaf pine during this

3-year period. In addition, over 3 million longleaf pine seedlings have been planted where natural regeneration was inadequate.

In order to restore tens of thousands of acres with control burning, we initiated aerial ignition using an Air Force UH-1 helicopter. Last year alone, we were able to burn 53,000 acres. This is a 3-fold increase in acres burned. During the last three years, 105,000 acres of fire-dependent natural communities were prescribe burned.

A soil erosion abatement program was initiated to stop degradation of the endangered Okaloosa darter's habitat, caused by sediment flow from active and inactive borrow pits. Contracts were let with the Army Corps of Engineers to design and restore 7 borrow pits impacting wetlands and streams of the Okaloosa darter.

When you combine numerous lightning strikes from the northwest Florida sky, with numerous explosive munitions tests, you get numerous wildfires. Our natural resources staff controlled 383 wildfires from 1991-93. New fire fighting techniques have been utilized to reduce damage to natural systems by using 4-wheel drive pumper units and silvex foam. The use of block and burn techniques, in concert with new fire suppression equipment, has reduced

damage to natural vegetation by 70 percent. We were the first natural resource organization in the Air Force to develop its own fire suppression training program that meets the standards of the National Wildfire Coordination Group. The majority of our employees have been sanctioned by this organization to participate in nationwide wildfire suppression efforts.

#### SUMMARY

In summary, Integration of professionals from all areas of science is required if we are to understand how the many parts of a complex natural system function together. As we learn and try new techniques, monitoring and research will help show the relationship between expected results and actual conditions. This adaptive management approach is essential if we are to improve the effectiveness of management programs. We remain dedicated at Eglin Air Force Base to restore and maintain a healthy, natural system and blend this effort with an active and diverse military mission.

We would like to close this briefing with a short video featuring our partners in natural resource management. Thank you.

**CONSERVATION OVERVIEW**  
**Mr. Robert Lacey, USA CERL**

# **Conservation Overview**

**Presentation To**

**Major Range and Test Facility Base (MRTFB)  
Environmental Coordinating Committee  
April 26- 28, 1994**

**Robert M. Lacey  
USACERL**

**CONSERVATION OVERVIEW**

**Conservation R&D Objective**

**To provide Tools to Conserve, Protect, and Enhance  
Natural and Cultural Resources and foster  
Stewardship that meets Environmental Laws and  
Regulations and Sustains Military Lands for  
continued use**



## **CONSERVATION OVERVIEW**

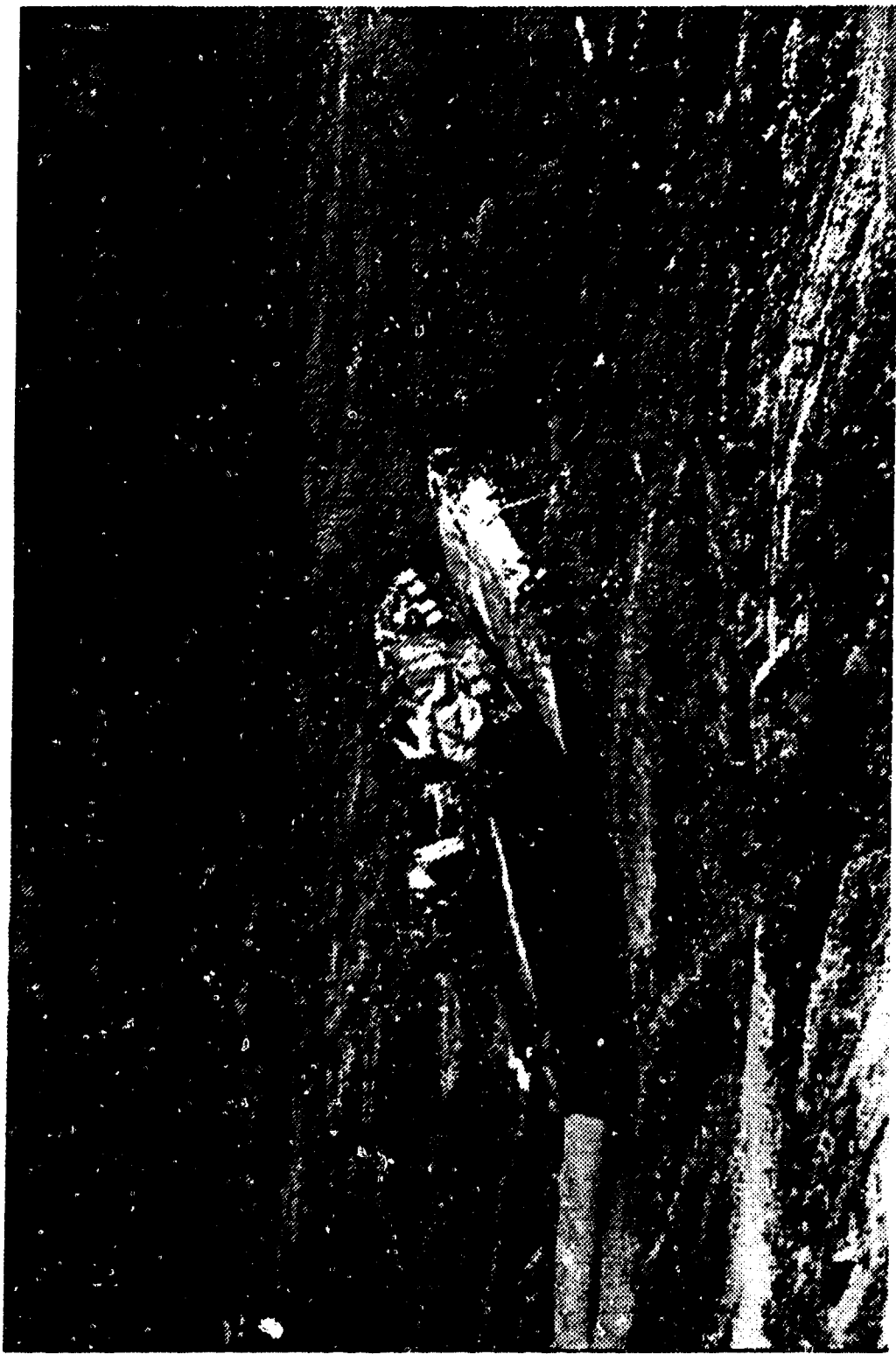
### **Major Drivers**

- o Need to obtain natural and cultural resources baseline data**
- o Loss of valuable training lands due to erosion**
- o Spatial fragmentation of resources and mission due to co-location**
- o Lack of assessment tools for monitoring short- and long-term impacts**
- o Need to reduce the cost of land rehabilitation**
- o Need to improve protection of threatened and endangered species**
- o Need to protect the biological health and diversity of DoD installation natural ecosystems**

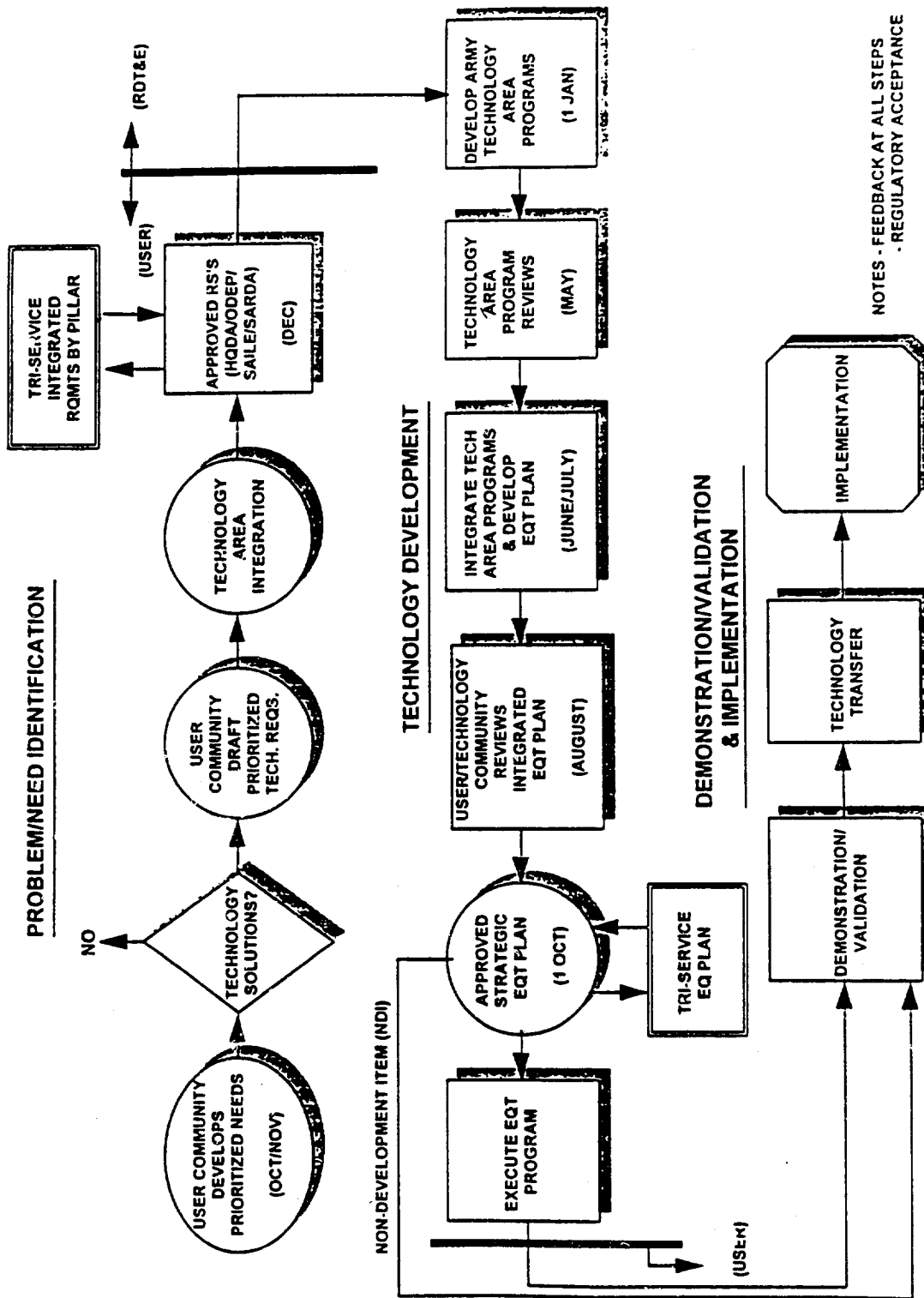








# ENVIRONMENTAL QUALITY TECHNOLOGY PROGRAM



pg. 52

## CONSERVATION OVERVIEW

### Basis for Efforts

- o Sixty-four (64) Tri-Service user requirements identified for 1993 Environmental Quality R&D Strategic Plan
  - 40 Army Requirements
  - 22 Navy Requirements
  - 2 Air Force Requirements
- o Requirements can be categorized into needs in three broad areas:

### Resource Characterization

### Impact Analysis

### Mitigation and Rehabilitation

## **CONSERVATION OVERVIEW**

### **Conservation Resource Characterization Needs**

**Standard, scientific methods to inventory, characterize and monitor natural and cultural resources**

### **Technology Solutions Sought**

- o Inventory standards**
- o Remote sensing and imagery for inventory and monitoring**
- o Spatial models**
- o Automated analytical tools**



## **CONSERVATION OVERVIEW**

### **Conservation Impact Analysis Needs**

**Impact assessment methods and capabilities to match activities with resources**

### **Technology Solutions Sought**

- o Resource impact models for military application**
- o Analytical and spatial models for carrying capacity**
- o Automated systems for decision support**

## **CONSERVATION OVERVIEW**

### **Conservation Mitigation and Rehabilitation Needs**

**Technologies to maintain and enhance resources in conjunction and integrated with military activities**

#### **Technology Solutions Sought**

- o Erosion control and land rehabilitation techniques**
- o Land maintenance methods**
- o Mitigation strategies for sensitive species**
- o Systems for cultural resource management**

## CONSERVATION OVERVIEW

### THRUST 4.F. Threatened and Endangered Species

#### USER NEEDS

- o Technologies for inventory and monitoring of TES
- o Identify impacts on TES
- o Integrate mission and T/E species management requirements
- o Protection of T/E species
- o Reduce "incidental take"

#### OBJECTIVE/SCOPE

Develop capabilities for least-cost threatened and endangered species inventory and impact analysis

#### TECHNOLOGY APPROACH

- o Standard guidance for inventory
- o Classify military activities as impactors
- o Integrate T/E species with mission activities

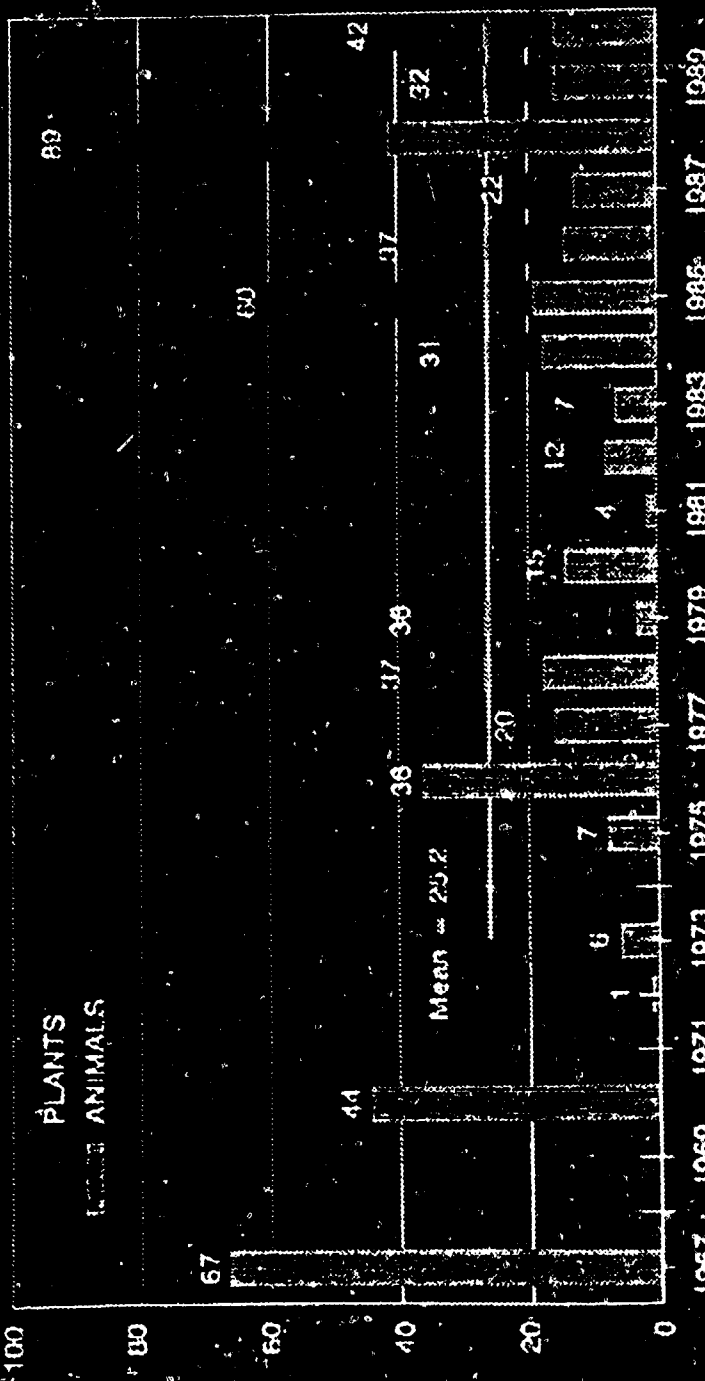
#### PAYOFF

Least-cost assessment of TES impacts on mission.

# Threatened & Endangered Species

Listings Per Year

NUMBER LISTED EACH YEAR

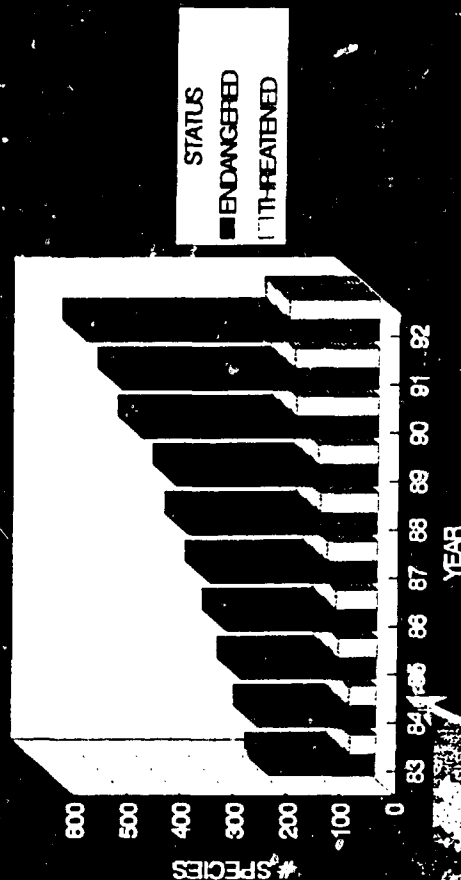


YEARS

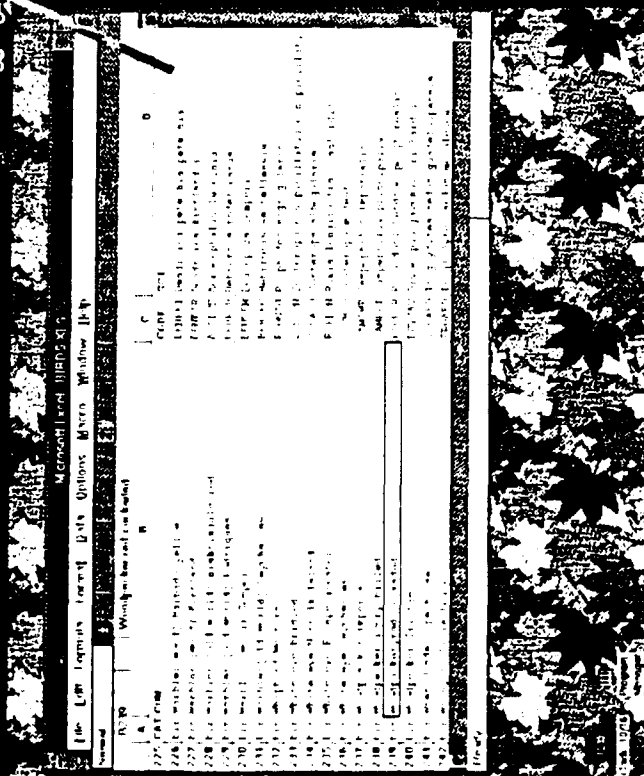


# Graphical and Tabular Information

TREND OF FEDERALLY LISTED SPECIES



## Population Trends Mission Constraints



## Federal and State Listing Status



## Pictorial Location Information Using GIS

Historical Distribution & Present Range of Species  
Critical & Sensitive Habitat

## CONSERVATION OVERVIEW

### THRUST 4.C. Erosion Control Technologies

#### USER NEEDS

- o Stabilize and maintain severely disturbed landscapes
- o Reduce land damage and lost land use capability
- o Maintain suitable training/testing land areas
- o Reduce excessive soil erosion and restore landscapes

#### OBJECTIVE/SCOPE

Modifications to and develop erosion control techniques to maintain military lands

#### TECHNOLOGY APPROACH

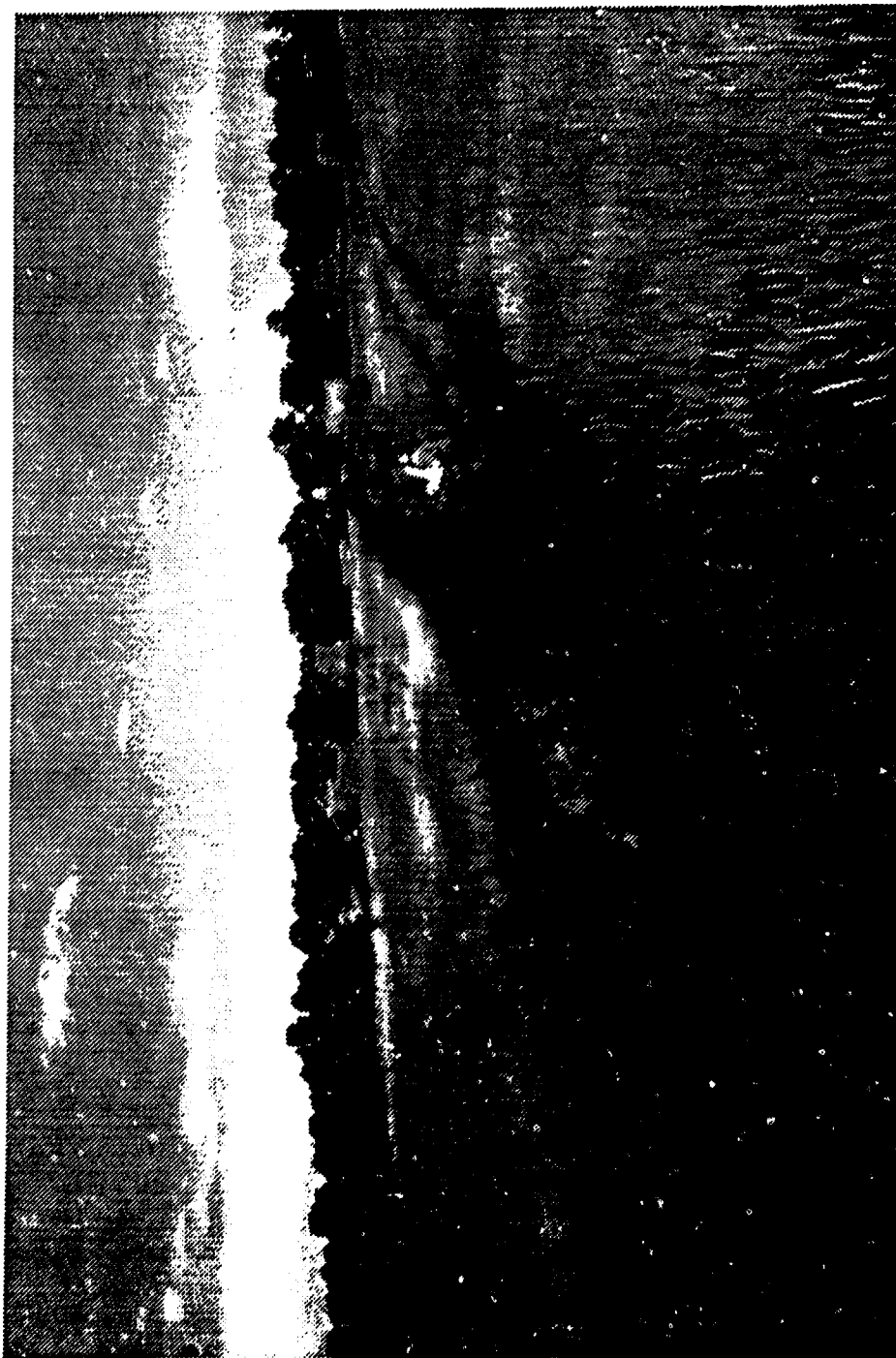
- o Erosion control guidelines
- o Resilient species revegetation
- o Erosion prediction models
- o Consolidated guidance on erosion control

#### PAYOFF

Low-cost rehabilitation techniques to maintain the quality of training lands.











VIII-67







VIII-70





## CONSERVATION OVERVIEW

### THRUST 4.B.Land Capability Characterization TECHNOLOGY APPROACH

#### USER NEEDS

- o Information management protocols
  - o Analytical standards
  - o Collect and integrate remote and field data
  - o Classify lands in terms of carrying capacity
  - o Causal relationships between military operations and environmental carrying capacity
  - o Match land use requirements with capacity
- 

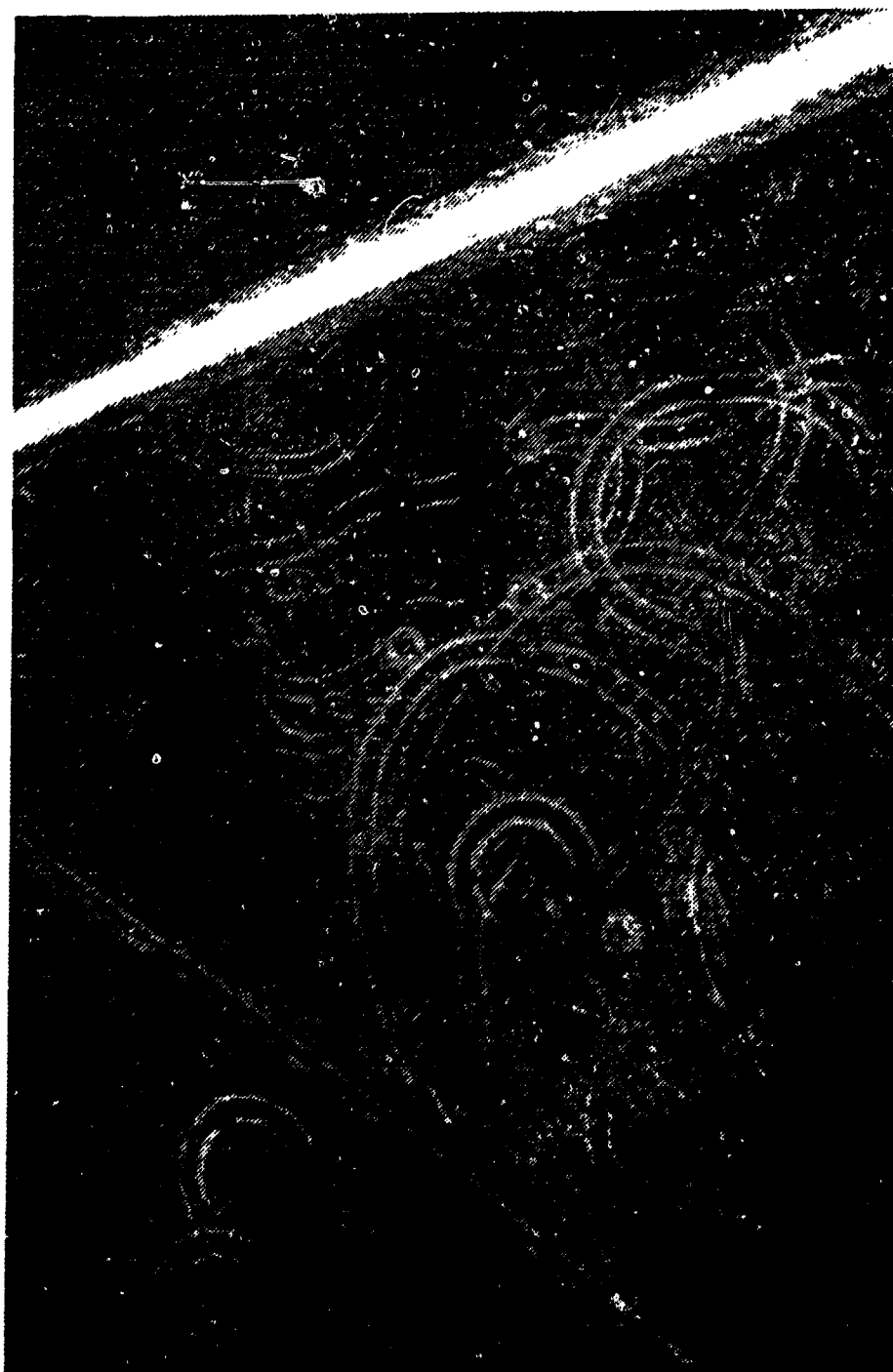
#### OBJECTIVE/SCOPE

Comprehensive models to determine range/training area carrying capacity on training and testing lands of DoD

- o Standardized information management schema
  - o Advanced systems for data collection
  - o Classify military activities as impactors
  - o Assess regional capabilities
  - o Advanced analytical capabilities
  - o Model carrying capacity
- 

#### PAYOFF

Improvements in realism and safety and savings in land rehabilitation and equipment maintenance.







MAPSET: tud

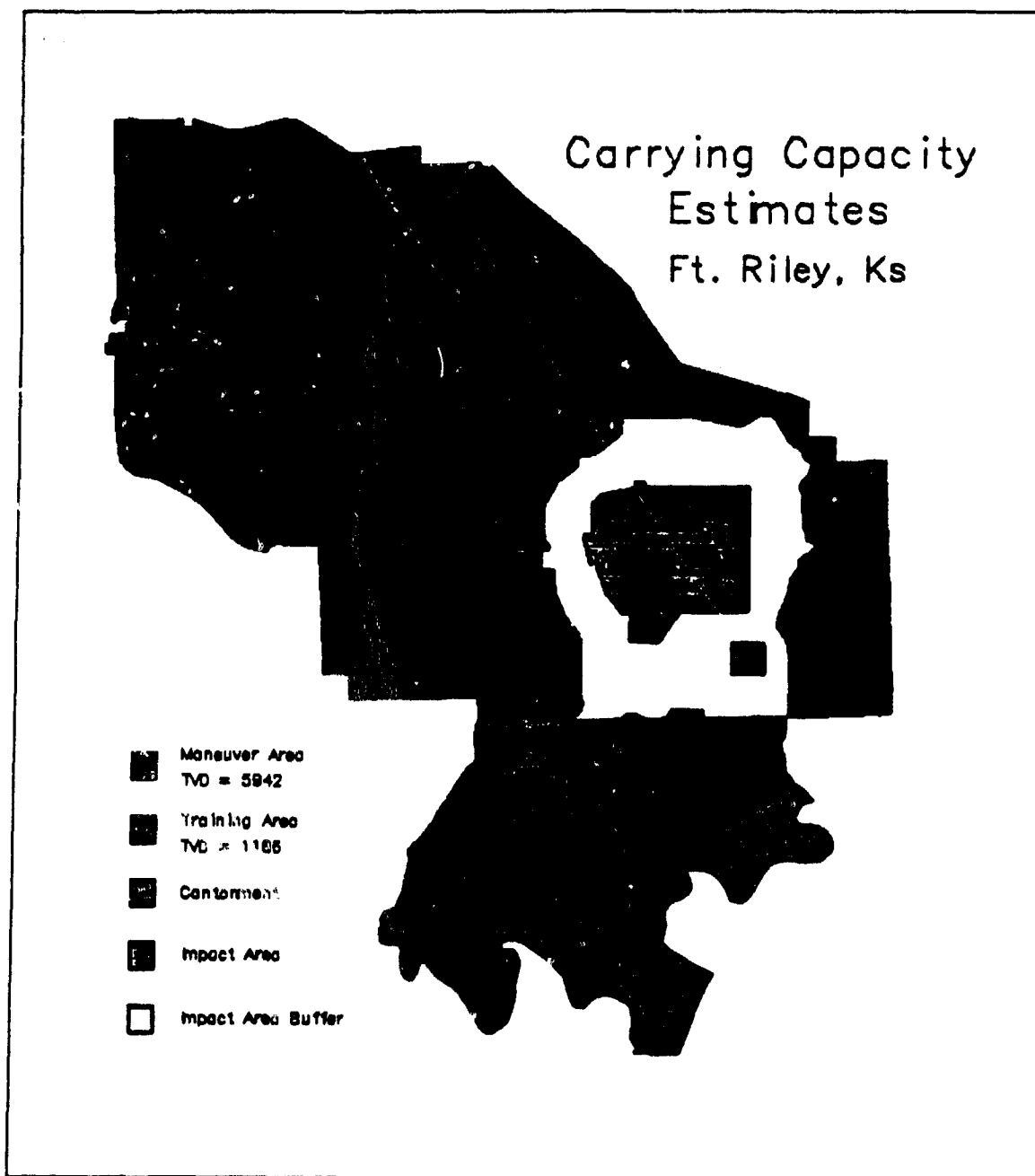
USER: grass

RASTER MAP: <training.regions> in mapset <tud>

MASK: none

Produced by: US Army CERL, Champaign Illinois  
Software: GRASS

TITLE: Training Regions  
LOCATION: FORT RILEY, KANSAS



SCALE: 1 : 194316

## CONSERVATION OVERVIEW

### THRUST 4.R.Archeological Sites

#### USER NEEDS

- o Archeological site location and protection
- o Stabilization of archeological sites
- o Maintenance of historic structures
- o Spatial/temporal modeling of cultural resources and their relationships to landscape features and processes

#### TECHNOLOGY APPROACH

- o Initial inventory survey standards
- o Multivariate analysis to assess significance
- o Subsurface site characterization
- o Site protection techniques

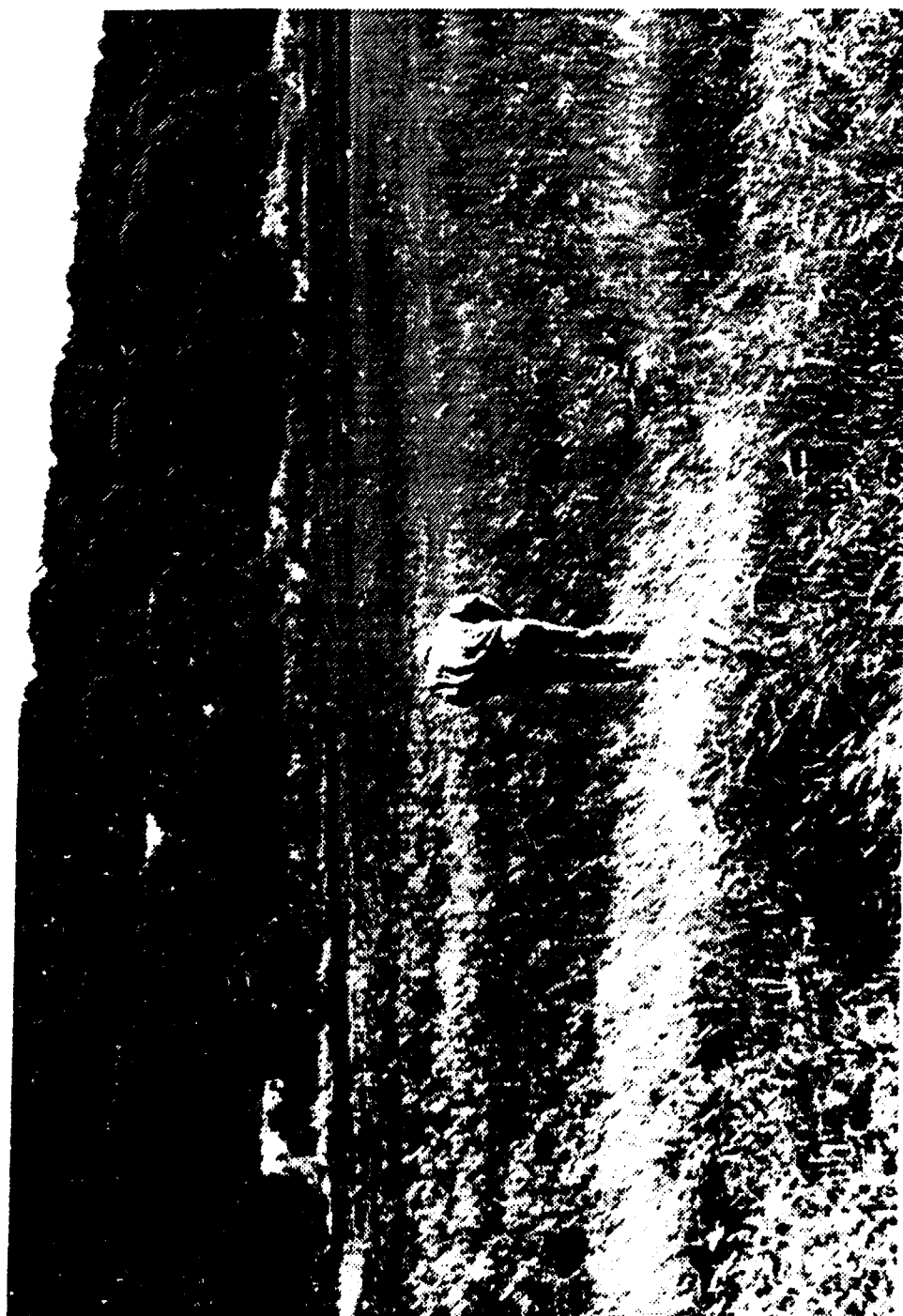
#### PAYOFF

Reduce the potential for inadvertent discovery and meet legal requirements for baseline resource data recovery.

#### OBJECTIVE/SCOPE

Advanced data collection and measurement tools for high confidence assessment of archeological sites











**IX. SUBCOMMITTEE PANELS AND  
WORKING GROUP SESSIONS**

**RESEARCH AND DEVELOPMENT**

## RESEARCH AND DEVELOPMENT

A brief MECC research and development subcommittee meeting was held on the third day of the workshop. Mr. Don Harrison, from WL/MNOE Eglin Air Force Base, was introduced as the new chairman for the subcommittee. The subcommittee meeting featured short presentations by Mr. Lance VanderZyle of Yuma Proving Ground (YPG), Mr. Malcolm Mackenzie of YPG, Mr. Al Lopez of the Naval Air Warfare Center—China Lake, and Dr. Regina Dugan of the Institute for Defense Analyses. A short summary of each of these presentations is provided below.

Mr. Lance VanderZyle discussed a project that just started that is sponsored by the Central Test and Evaluation Investment Program (CTEIP). This project will create a model for use by test and evaluation planners to assist them in estimating costs associated with the environmental impact of a test on the range. Current plans are to link the model with a geographic information system (GIS). Mr. VanderZyle indicated that he plans to demonstrate the model at several Major Range and Test Facility Base activities. The project is a two-year effort and will focus on integrating existing software utilizing contract mechanisms in place at YPG. A copy of the presentation and the preliminary project description can be found later in this chapter.

Mr. Malcolm Mackenzie discussed YPG's participation in the Western Governors Association's Development of On-Site Innovative Technology (DOIT) program. He indicated that YPG has been selected as a test site for demonstrating technologies that will assist in the identification and removal of surface ordnance from military ranges. He indicated that this is not a funded activity. However, the site selection does give YPG advantages in project selections. As part of the program, YPG has set up a special range with known inert ordnance placement. This site can be used by organizations to demonstrate their ordnance detection and location technologies.

Mr. Al Lopez briefed the status of the fiscal year (FY) 1994 Strategic Environmental Research and Development Program (SERDP). The FY94 SERDP program plan has been approved by the SERDP Council and the FY95 program development process is underway. The FY95 call for proposals is expected to be limited. The continuation of past year projects has the potential to consume a significant portion of the FY95 budget. The guidance for the FY95 call for proposals is being prepared along with

the Tri-Service Environmental Quality Research and Development Strategic Plan (Green Book). Both of these documents are needed before the SERDP call for proposals can be issued. A copy of Mr. Lopez's presentation can be found later in this chapter.

Dr. Regina Dugan briefed the status of the efforts to identify MRTFB environmental research and development requirements. A draft letter to be sent to the ranges requesting more detailed information on requirements was presented to the subcommittee for review. Those present thought that the letter should also request a point of contact to work with Dr. Dugan on the requirements identification. It was pointed out that MECC efforts last years to identify and elevate requirements resulted in Major Range and Test Facility Base environmental research and development requirements being specifically addressed in the SERDP call for proposal guidance for FY94. The follow-up effort discussed during the subcommittee meeting should provide similar input to the Tri-Service Environmental Quality Research and Development Strategic Plan. Dr. Dugan suggested an outbrief be made to the Range Commanders Council, and to the Office of the Deputy Under Secretary of Defense (Environmental Security). A copy of Dr. Dugan's presentation and the draft letter can be found later in this chapter.

The following individuals participated in the research and development subcommittee meeting:

Jesse Borthwick	AFDTC/EMP
Regina Dugan	IDA
Don Harrison	WL/MNDE, Eglin AFB
Ralph Holweck	TEMA
Al Lopez	NAWC-WD
Malcolm Mackenzie	YPG
Pablo Padilla	STEWS-IDD-TS (WSMR)
Ken Smith	NAWC-AD Trenton
Dave Sparrow	IDA
Janet Tucker	AFDTC/PAU
Lance VanderZyle	YPG
Cheryl Weiss	NAWC-WD
Steve Wiley	NAWC-WD
Chuck Wullenjohn	YPG

**MECC R&D SUBCOMMITTEE**

4/21/54

**R&D WORKSHOP**

IX-3

**AL LOPEZ  
NAWCWPNS C27D  
PH 619 939-7463**

# **MECC R&D SUBCOMMITTEE**

4/21/84

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## **AGENDA**

**ENVIRONMENTAL SIMULATION MODEL**

**LANCE VANDER ZYL**

**R&D REQUIREMENTS UPDATE**

**REGINA DUGAN**

**WESTERN GOVERNORS UPDATE**

**MALCOLM MCKENZIE**

**SERDP UPDATE**

**AL LOPEZ**

**MRTFB R&D THRUSTS**

**OPEN DISCUSSION**



# ENVIRONMENTAL SIMULATION MODEL



Lance Vander Zyl  
7 April 1994



## Agenda

- Problem:
- Objective:
- Concept:
- Project Management:
- Summary:



## Problem:

- Ability to adequately predict the environmental costs
- Myriad of regulations with do's and don'ts
- Ever more restrictive dynamic regulatory arena
- Need to meet test requirements & minimize environmental costs.



## Objective:

- Provide tool to determine and assess environmental costs
- Provide data for comparative judgements of environmental costs
- Short term ( 2 Years)
- Low cost (\$200K per year).

### Concept:

- STEP 1. IDENTIFICATION:
- STEP 2. SELECTION:
- STEP 3. MODIFICATION:
- STEP 4. VERIFICATION:
- STEP 5. IMPLEMENTATION:

### IDENTIFICATION: 3 Months

- Initial investigations reveal there are environmental cost prediction models that draw upon GIS.
- Generate an inventory of environmental models w/cost analysis capabilities
  - Include private & public sector
- Issue CBD Sources-Sought

### SELECTION: 2 months

- Analyze models for potential application
- Developed A weighted set of criteria
  - Adaptability for use by the test community,
  - Ability to use multiple data base formats,
  - Portability between platforms,
  - Compatibility with existing costing models,
  - Ability to incorporate constraints based upon environmental regulation
- Rank, based upon score against criteria.

### MODIFICATION: 15 months

- Adapt model for use by the test community
- Incorporate knowledge of environmental issues
- Emphasise modularity and adaptability
- Utilize high level programming language
- Utilize multiple platform operating system
- Strive for cross platform transportability
  - develop 100% to RISC based workstation
- Use networked databases
- Use partial data bases
- User selectable parameter adjustments for sensitivity analysis

### VERIFICATION: 6 months

- Model distributed to a preselected group
  - J varied test iterations with environmental cost data.
- Test agencies will incorporate data unique to their area into the model
- Simulations will be run based upon actual past efforts
- The predicted data will be compared against actual, verified cost data
- Modifications, if required, will be made and incorporated in all systems

### IMPLEMENTATION:

- The final model will be distributed for use by the MRTFB's and other interested agencies, both Government and commercial
- Sustainment of the modular databases developed by and for this model will be managed in accordance with guidance provided by the Defense Modeling and Simulation Organization

### Project Management:

- YPC will use its Science-and-Technology Basic Ordering Agreement (BDA) contract for project execution
- Advance Technology & Environmental personnel at YPC will provide project oversight
- An Environmental Model Project Management Group, comprised of tri-service personnel and other appropriate personnel, will be formed to assure quality development

### SUMMARY



1. The simulation model will utilize a high level programming language ("C") and a multiple platform operating system (Unix) to provide cross platform transportability. The kernel will be a shell program utilizing a series of algorithms to provide optimization of costs versus benefits. The kernel will be generic in design to accommodate importing of site specific modules. These modules will include data bases identifying environmental impact areas, specific environmental regulatory assessments, DMA and GIS data, etc. Changes to regulations and the environment will require changes of development of new individual modules. The platforms will range from a desktop i486 to a RISC based workstation. The use of networked databases should preclude the need for mass storage and mainframe requirements. The model will have access to, but will not require, entire data bases to perform it's function. User selectable parameter adjustments will be provided for sensitivity analysis of any given project.
2. The program will come with a users manual and online help to operate it.
3. Through the use of a kernel program and site specific modules.
4. Output will consist of a listing of all assumptions and requirements input to the program and the associated costs and benefits for each approach. Sensitivity analysis will provide output ranges or trends for changes to the input.
5. Every effort will be made to incorporate output from other environmental models and simulations as modules to this program.
6. Initial efforts will validate the model against historical data at various test sites. Formal Independent Validation and Verification may be required for use as a policy making tool.
7. The model will provide a fast and economical cost and operational effectiveness analysis for test managers to select the least cost approach while meeting all environmental regulations.
8. Yes, air and sea flow digital databases are planned to be incorporated as modules.
9. Any environmental policy can be developed into a module and, through sensitivity analysis, change in policy can be defined by increase or decrease in cost to selected programs.
10. No additional funds are planned at present. Follow-on is the use at various sites.
11. YPG will use its Science-and-Technology Basic Ordering Agreement (BOA) contract for project execution. Advance Technology & Environmental personnel at YPG will provide project oversight. An Environmental Model Project Management Group comprised of tri-service personnel and other appropriate personnel will be formed to assure quality development.
12. We will distribute the model to a preselected group of three varied test installations with corporate environmental cost data. These test agencies will incorporate data unique to their area into the model. Simulations will be run based upon actual past efforts. The predicted data will be compared against actual, verified cost data. Project completion is based on successful comparisons.

## ENVIRONMENTAL SIMULATION MODEL PROPOSAL

**Problem:** One of the most important and often times most time consuming issues facing a project manager is the ability to adequately predict the environmental costs associated with the project. Project developers are faced with a myriad of regulations with do's and don'ts that cost time and money. This creates confusion as developers attempt to carry out their test mission. This issue is faced by the test community as well as the private sector. Presently, decisions regarding the configuration of a test may not consider alternatives that meet test requirements and minimize environmental costs. This problem of cost prediction is further compounded by a very dynamic regulatory arena that continues to be ever more restrictive at a time when DoD is downsizing and valuable dollars are ever more scarce.

**Objective:** This environmental simulation model will enhance the testers ability to determine and assess environmental costs for a wide variety of projects. It will provide data for comparative judgements of environmental costs associated with various test configurations. The project is designed to be rather short term ( $\approx 2$  Years) and low cost (\$200K per year).

**Concept:** The following five step process is proposed to reach our objective:

**STEP 1. IDENTIFICATION:** An inventory of environmental models that have cost analysis capabilities will be generated. The universe of candidate models includes both the private and public sector. A CBD Sources-Sought is being developed to help us identify these models. Initial investigations revealed there are management agencies and private companies who are using environmental cost prediction models that draw upon GIS. The time needed to inventory and screen suitable candidate models is estimated at three months.

**STEP 2. SELECTION:** We will analyze and assess the models for their potential application to this effort. A weighted set of criteria is being developed. The criteria and their associated weight will reflect areas of concern (eg. adaptability for use by the test community, use of multiple data base formats, portability between platforms, compatibility with existing costing models, ability to incorporate constraints based upon environmental regulation). All candidate models will be ranked based upon their score against our criteria. It is estimated the selection process will require approximately two months.

**STEP 3. MODIFICATION:** The selected candidate model or models will be adapted for use by the test community. We will incorporate a detailed knowledge of environmental issues associated with testing and costs into the computer simulation model. Emphasis will be placed on modularity and adaptability. Every effort will be made to utilize a high level programming language ("C") and a multiple platform operating system (Unix) to provide cross platform transportability. The platforms will range from a desktop i486 to a RISC based workstation. The use of networked databases should preclude the need for mass storage and mainframe requirements. The model will have access to, but will not require, entire data bases to perform it's function. User selectable parameter adjustments will be

provided for sensitivity analysis of any given project. Initial tests of the model will utilize existing data and resources at YPG. The modification effort is estimated to require approximately 15 months.

**STEP 4. VERIFICATION:** We will distribute the model to a preselected group of three varied test installations with corporate environmental cost data. These test agencies will incorporate data unique to their area into the model. Simulations will be run based upon actual past efforts. The predicted data will be compared against actual, verified cost data. Modifications, if required, will be made and incorporated in all systems. The verification effort would require six months to complete.

**STEP 5. IMPLEMENTATION:** The final model will be distributed for use by the MRTFB's and other interested agencies, both Government and commercial. Sustainment of the modular databases developed by and for this model will be managed in accordance with guidance provided by the Defense Modeling and Simulation Organization.

**Project Management:** YPG will use its Science-and-Technology Basic Ordering Agreement (BOA) contract for project execution. Advance Technology & Environmental personnel at YPG will provide project oversight. An Environmental Model Project Management Group will be formed to assure quality development. This group will be comprised of tri-service personnel and other appropriate personnel. Total time from inception to end of project is thirty months.

# **MRTFB Environmental R&D Requirements Update**



**Regina E. Dugan  
David A. Sparrow**

**April 28, 1994**

## **MRTFB ENVIRONMENTAL R&D REQUIREMENTS SURVEY**

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**Found that many requests were not actually R&D, developed following categorization for responses:**

- 1. Leadership/Guidance requests**
- 2. Resource requests**
- 3. Short term R&D requirements**
- 4. Long term R&D requirements**



## **R&D REQUIREMENTS CATEGORIES**

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- a. R&D requirements that DoD shares with Industry
- b. R&D requirements unique to DoD
- c. R&D requirements unique to MRTFB (and large training areas)

*Categorization is particularly useful for deciding which funds to leverage.*

## **ADDITIONAL DIRECTION**

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- 1. Create an additional R&D category under MRTFB-unique requirements:**

**Engineering design/trade studies - very short term developments, design studies, research of state-of-the-art commercially available equipment, etc.**

**Additional category (Engineering design/trade studies) particularly relevant for CTEIP funds.**

- 2. Reexamine responses to survey to identify future environmental requirements**

# **THE NEXT STEP**

---

## **Develop an MRTFB Master Plan for Environmental R&D/Engineering requirements**

- **Additional data required to fortify position: advocate for funds to respond to requirements**
- **Two ways to obtain necessary additional data:**
  1. **Another pass on surveys**
    - \$ expended per year in response to specific problem
    - identify requirement drivers - operations, safety, environmental regulation, etc.
    - opportunity to identify areas where solutions may exist
  2. **Visits to several ranges to talk to various personnel - verification**

# **PROPOSED SCHEDULE**

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<b>March 94</b>	<b>Write-up of task specifics</b>
<b>April 94</b>	<b>Initiate second survey complete</b>
<b>June 94</b>	<b>Complete data collection</b>
<b>July 94</b>	<b>Visits complete</b>
<b>Aug 94</b>	<b>Analysis of findings and survey results</b>
<b>Sept 94</b>	<b>Report draft</b>

DRAFT

MEMORANDUM FOR MAJOR RANGE AND TEST FACILITY BASE COMMANDERS

SUBJECT: Research and Development Requirements Driven By Environmental Issues

As part of our mission to provide test and evaluation services for weapon systems programs, we are required to protect the environment for which we are stewards. However, the number of environmental requirements continues to grow and has begun to compete directly with test mission requirements for resources. To ensure that we are able to continue to meet test and evaluation requirements, we must look for ways to meet environmental requirements more efficiently and more economically.

One of the goals of the Department's environmental technology programs is to provide technologies that will reduce the cost of satisfying environmental requirements. To benefit from these technology programs, we must ensure that our requirements are clearly identified. Thus, the MRTFB Environmental Coordinating Committee (MECC) is conducting the attached survey which is a follow-up to the survey conducted in the spring of 1993. The goal of this follow-up survey is to document *specific details* on our environmental requirements.

Already, we have seen the potential value of having this information. Last year's survey results were used to help write the FY94 Strategic Environmental Research and Development Program call for proposals and to provide input for the Department's environmental technology strategic plan. Ultimately, we hope that the response from this survey will allow the user community to leverage R&D resources to address the most pressing environmental needs of the MRTFB.

In addition to influencing the Department's environmental technology program, this survey is designed to elicit information on test technology requirements that are driven by environmental requirements. A small portion of the Central Test and Evaluation Investment Program's test technology development and demonstration project has been set aside to address these emerging test capability requirements. The results of this survey will be used to solicit, review and determine funding allocation for test capabilities in this area.

Please note the directions on the attached survey. My point of contact for this issue is Mr. Bob Wood, Chair of the MECC. Mr. Wood can be reached at 805/277-1407.

**Please complete and return the survey by June 3, 1994.**

DRAFT

1

## SURVEY GUIDELINES

**The Survey Format:** The survey has four categories:

**I. Leadership/guidance requests**

*Focus on:* Test policies or procedures that are impacted by environmental requirements or that need to be reviewed/modified to incorporate environmental constraints.

**II. Resource requests**

*Focus on:* The impact of environmental requirements on the core T&E budget. In other words, if you are using O&M budgets to fulfill your environmental requirements, please indicate. Also, provide information regarding activities that are currently manageable but resource intensive, i.e., environmental problems that are currently solvable but for which the solution is costly or time consuming.

**III. Research and development requirements**

*Focus on:* The most pressing environmental problems at your facility for which you do not currently have a solution. These problems may be current or anticipated but must be indicated as such. This is the area of greatest interest for directing the environmental technology research and development efforts within the Department of Defense. Thus, this section of the survey will require the most time and the highest level of detail. You will be asked to provide information such as cost to your operations, the driver for the requirement, the extent of contamination, etc.

**IV. Requirements for new/modified test capabilities driven by environmental constraints**

*Focus on:* The future test capabilities or test modifications that will be required to carry out the test and evaluation mission in light of current or anticipated environmental constraints. Also, report on the use of toxic release inventory chemicals.

**Completing the survey:** On the next pages you will find the following in each category:

*a. Examples from the previous survey*

*b. Request to provide information on your top three priority requests. Examples of good and bad responses appear below:*

**Bad:** We have a real problem with disposal of fluids from our painting booths.

**Good:** EPA regulation XXX requires that we enclose our painting booths to capture all waste streams. We are required to capture all resulting gases, liquids, and solids because we use X solvent in our painting operations. We dispose of 30, 55-gal drums of mixed hazardous waste from our facility per year. We pay \$1000/drum to have a permitted facility dispose of the waste.

**Bad:** We have a problem with POL contaminated soil.

**Good:** At 6 sites we have contamination of the soil with JP-4 resulting primarily from testing operations on unmanned air vehicles. Approximately 2000 cubic yards total are contaminated. Soil samples indicate concentrations of JP-4 exceeding 1000 ppm. Mapping of the JP-4 contamination is complete at 5 of the 6 sites. We have a bioventing program in place at one of the 6 sites. Feasibility data is due in 6 months. The state EPA has agreed to allow the remaining 5 sites to attenuate naturally provided we implement wellhead protection to prevent contamination of the local groundwater. This program costs \$50K/yr and is expected to increase to \$100K/yr as remedies are implemented.

We recommend that you use the format of the provided checklist to ensure that your responses are complete. Examples are included.

*c. Checklist*

You may use the hard copy templates provided here, download the format from Technet, Bulletin # , or from the accompanying diskette.

If you have any question regarding the completion of this survey, please phone either Regina E. Dugan at (703)578-2994 or David A. Sparrow at (703)578-2992. Good luck.

## I. LEADERSHIP/POLICY GUIDANCE REQUESTS

### a. *Examples from previous survey:*

- Need environmental considerations (NEPA) to be factored into test planning early in the process
- Need quick response capability for regulators. Regulators expect response in days or weeks: no mechanism exists within Department of Defense that facilitates quick response
- Need nationally promulgated regulation for chemical agent or breakdown products. States have taken on this responsibility themselves and requirements are unachievable
- Need interaction with the EPA regarding hazardous waste categorization D003 (explosive characteristic). At the level of contamination required, the explosive criterion is not met.
- Need method to certify that equipment or dunnage is PEP free
- Need RCRA requirement for the handling of unexploded ordnance (UXO) as hazardous waste to be resolved. RCRA requirement says that UXO cannot be stored for >90 days, but this is in conflict with DoD safety requirements
- Need uniform procedure for disposal/recycling of used and unused fuel and oil

### b. *List your top three priority items in this category. Respond using the following checklist format.*

*Remember to focus on:* Test policies or procedures that are impacted by environmental requirements or that need to be reviewed/modified to incorporate environmental constraints.

### c. *Checklist:*

#### 1. Priority

(1, 2, or 3, and criteria used to set the priority: cost, manhours, etc.)

#### 2. Specific description of problem

(Need method, other than flashing, to certify that materials are PEP free.)

#### 3. How extensive is the problem?

(E.g., We are required to flash approximately x kg of materials consisting of dunnage, etc. each year as a result of routine test operations.)

#### 4. What is the driver?

(EPA regulation, range safety, public relations, cost, e.g., AMC 755-8 states that materials with levels of contamination of PEP at x ppm must be flashed. However, we are unable to obtain a permit for flashing furnace since it is classified as an incinerator.)

#### 5. How does this effect testing operations? What is the cost?

(Because we are unable to obtain an incinerator permit, we must store the materials and ultimately dispose of them in hazardous waste incinerators off site. The annual cost to our operations is approximately \$x.)

#### 6. Can you estimate future impact?

(We expect that as the EPA further regulates explosive materials, handling costs will double and meeting EPA hazardous waste requirements will be in direct conflict with range safety operations thus affecting our ability to conduct ... tests. Also, we are aware of pending State legislation that would further restrict our operations by ...)

#### 7. How are you currently handling the problem?

(We send explosive contaminated materials off-site to the "Acme" Incineration plant at a disposal cost of \$550/ton including shipping and handling costs.)

#### 8. Other relevant information

## II. RESOURCE REQUESTS

### a. Examples from previous survey:

- Need bar-coded hazardous material inventory system to track hazardous materials including toxic release inventory (TRI) substances for SARA, Title III: Right to know
- Need software that is capable of taking data directly to compliance documentation
- Need cross-reference guide for use of non-toxic replacements
- Need easy-to-use composting equipment
- Need automated monitoring for wells
- Need funding for database to create useful GIS
- Need GIS database for environmental/ecological data

### b. List your **top three** priorities in this category. Respond using the following checklist format.

*Remember to focus on:* The impact of environmental requirements on the core T&E budget. In other words, if you are using O&M budgets to fulfill your environmental requirements, please indicate. Also, provide information regarding activities that are currently manageable but resource intensive, i.e., environmental problems that are currently solvable but for which the solution is costly or time consuming.

### c. Checklist:

#### 1. Priority

(1, 2, or 3, and criteria used to set the priority: cost, manhours, etc.)

#### 2. Specific description of problem

(Sampling of monitoring wells for BTEX, chlorinated solvents. Last year we were required to monitor the 400 wells on our south testing range. Our resources permitted us to sample only 200 of the 400 wells.)

#### 3. How extensive is the problem?

(We have a total of 1000 monitoring wells unsampled across the range. We estimate the total yearly requirement for well sampling to be x. We are out of compliance on 430 of the 1000.)

#### 4. What is the driver?

(EPA regulation, range safety, public relations, cost. Be specific; e.g., Federal EPA regulation XXX requires well sampling as part of our wellhead protection plan for the local drinking water supply (60,000 residents). In addition, our agreement with the State and Local entities requires ...)

#### 5. How does this effect testing operations? What is the cost?

(We are unable to conduct tests such as ..., it has adversely effected our working relationship with regulators, etc. Sampling of the 200 wells costs approximately \$x per year.)

#### 6. Can you estimate future impact?

(We estimate that the inability to monitor our wells will result in \$3M in fines within the next 3 years.)

#### 7. How are you currently handling the problem? Are your environmental funds insufficient? Are you using institutional funds? Are you out of compliance?

(Of the \$x we currently require to sample wells, we must utilize \$x per year from our general O&M funds.)

#### 8. Other relevant information



### III. RESEARCH AND DEVELOPMENT REQUESTS

*a. Examples from previous survey:*

- Removal of POLs/solvents/heavy metals from contaminated soil and groundwater
- Recycling and reclamation of munitions
- Mapping of UXO locations - memorialization; recovery of UXO
- Land management: dust suppression; herbicide effects; vegetation changes
- Solvent and CFC replacements
- Disposal of chemical agents
- Fate and effects of depleted uranium/chemical agent/explosive breakdown products
- Cumulative effects of ordnance testing on ecosystem
- Effects of blast and vibration - noise control
- Factors effecting delineation of ecosystem
- Measure of ecosystem carrying capacity - biodiversity measures

*b. List your top three priorities in this category. Respond using the following checklist format.*

*Remember to focus on:* The most pressing environmental problems at your facility for which you do not currently have a solution. These problems may be current or anticipated but must be indicated as such. This is the area of greatest interest for directing the environmental technology research and development efforts within the Department of Defense. Thus, this section of the survey will require the most time and the highest level of detail.

*c. Checklist:*

**1. Priority**

(1, 2, or 3, and criteria used to set the priority: cost, manhours, etc.)

**2. Specific description of problem**

(TCE contaminated soil and groundwater. Preliminary sampling and mapping activities indicate average contamination levels in various media (soil, groundwater) as shown: ... We are containing the TCE plume successfully in one of our aquifers, but .... )

**3. How extensive is the problem?**

(Soil contamination is estimated at 5, 3000 yd<sup>3</sup> areas. All of these areas have progressed to contamination of the local aquifers (2 independent aquifers) that supply water to x residents.)

**4. What is the driver?**

(EPA regulation, range safety, public relations, cost - be specific; Federal EPA XXXX and RCRA Section XXXX require that the contamination be cleaned to a level of ...)

**5. How does this effect testing operations? What is the cost?**

(We estimate the cost of this activity at \$x per year. We have had a program ongoing for 3 years. Pump and treat activities have resulted in a contamination level decrease from x ppm to y ppm in that period. The contamination level has now bottomed out. We do not expect to be able to clean-up the TCE contamination using current treatment technologies. This activity requires the attention of 2 FTE employees and the services of 2 contractors.)

**6. Can you estimate future impact?**

(We expect continued pressure from regulators both federal and state. Public confidence is eroding.)

**7. How are you currently handling the problem?**

(TCE plumes are currently managed by hydraulic control of the aquifer in anticipation of better cleanup technologies.)

**8. Other relevant information**

**9. What DoD environmental "pillar" does the problem fit into?**

(Cleanup, Compliance, Conservation, or Pollution Prevention)

#### IV. REQUIREMENTS FOR NEW/MODIFIED TEST CAPABILITIES DRIVEN BY ENVIRONMENTAL CONSTRAINTS

*a. Examples from previous survey:*

This is the first request in this category of response.

*b. List your top three priorities in this category. Respond using the following checklist format.*

*Remember to focus on:* The future test capabilities or test modifications that will be required to carry out the test and evaluation mission in light of current or anticipated environmental constraints.

*c. Checklist:*

**1. Priority**

(1, 2, or 3, and criteria used to set the priority: cost, manhours, etc.)

**2. Specific description of problem**

(Clean Air Act will eliminate our ability to conduct ... testing because ...)

**3. How extensive is the problem?**

(30% of the tests we conduct for the Army will be affected by this regulation. It represents \$2M dollars worth of testing over a five year period. List specific tests.)

**4. What is the driver?**

(Specific EPA regulation or general public relations issue, e.g., during ... testing, chemicals ..., and ... are released at levels typically in excess of ... This level exceeds the amended Clean Air Act levels by a factor of two.)

**5. How does this effect testing operations?**

(Currently, testing operations are unaffected.)

**6. Can you estimate future impact?**

(We do not expect the demand for this type of testing to abate in the foreseeable future. Thus, without a solution, 30% of our testing function will be lost.)

**7. How are you currently handling the problem?**

(We are not addressing the problem. Testing operations will not be affected by the regulation until 1995.)

**8. Other relevant information**

**9. What test capability do you need to be able to continue testing?**

(We require a test enclosure capable of overpressures of ...psi, and air management capable of removing ... ppm of ... at an average flowrate of ...)

**10. Your usage of the 17 Toxic Release Inventory (TRI) chemicals and the tasks for which they are used.**

The 17 TRI chemicals are.

Benzene	Mercury	1,1,1- Trichloroethane
Cadmium	Methylene Chloride	Trichloroethylene
Carbon Tetrachloride	Methyl Ethyl Ketone	Xylene
Chloroform	Methyl Isobutyl Ketone	
Chromium	Nickel	
Cyanide	Toluene	
Lead	Tetrachloroethylene	

DRAFT

## SURVEY RESPONSE FORM

Name: \_\_\_\_\_ Phone: (\_\_\_\_) \_\_\_\_\_  
Organization: \_\_\_\_\_ Date complete: \_\_\_\_\_

1. Priority
2. Specific description of problem
3. How extensive is the problem?
4. What is the driver?
5. How does this effect testing operations? What is the cost?
6. Can you estimate future impact?
7. How are you currently handling the problem? (*Add for Section III: Are your environmental funds insufficient? Are you using institutional funds? Are you out of compliance?*)
8. Other relevant information

*For Section III only:*

9. What environmental "pillar" does the problem fit into?

*For Section IV only:*

9. What test capability do you need to be able to continue testing?
10. Your usage of the 17 Toxic Release Inventory (TRI) chemicals and the tasks for which they are used. (*Attach separate page.*)

DRAFT

7

# **MECC R&D SUBCOMMITTEE**

4/21/94

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## **STATUS FY94 SERDP**

- PROPOSALS REVIEWED BY EXECUTIVE WORKING GROUP**
- COMPLETE PROGRAM PACKAGE NOW ASSEMBLED**
- PROGRAM GOING FORTH FOR APPROVAL**

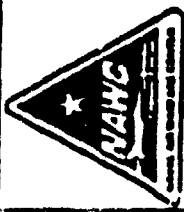
# **MECC R&D SUBCOMMITTEE**

4/21/94

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## **SERDP**

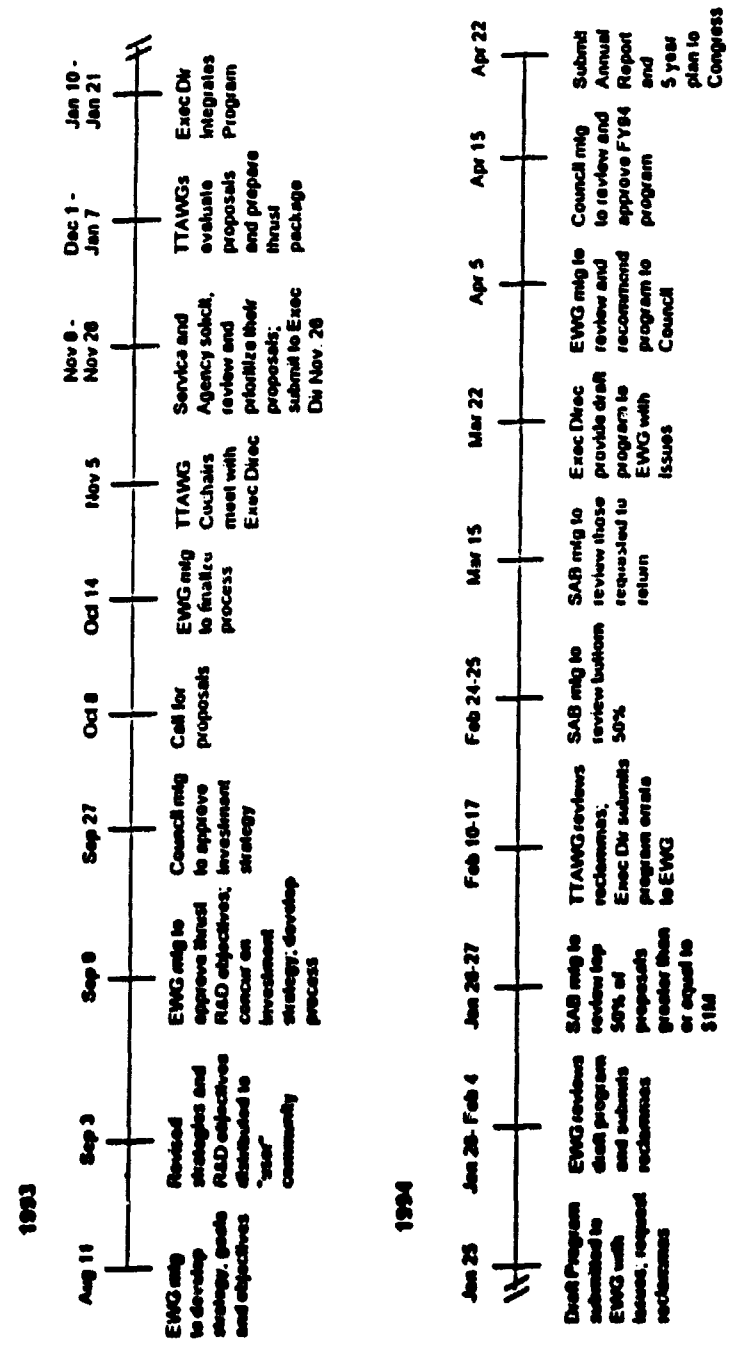
- FY94 PROPOSAL SCHEDULE UPDATE**
- RECENT ORGANIZATIONAL CHANGES**
- PLANS FOR SERDP 95**



# ENVIRONMENTAL TECHNOLOGY AND RESEARCH SERDP SCHEDULE

1/26/94

## FY 94 SERDP PROGRAM DEVELOPMENT SCHEDULE



# CLEANUP

240 Proposals evaluated

35 Funded

Characterization, Monitoring, Modeling, Measurement, Methods - Field	12	4 Optical Sensors 1 Nuc Mag Res sensor 1 Biosensor 3 Multi-sensor Integration
Hazard Risk Assessment, Modeling, Methodologies - Fate/Transport Models	1	2 Physical Monitoring 1 Subsurface Charac.
Hazard Risk Assessment, Modeling, Methodologies - Methodology & Protocol	1	
Treatment Technologies - Demonstrations	1	
Treatment Technologies - Groundwater/ Surface Water	14	8 Biotreatment 5 Chemical treatment 1 Air Waste Stream Tech.
Treatment Technologies - Soils/Sludges	6	

# **COMPLIANCE**

108 Proposals evaluated

24 Funded

**Boiler/Engine Emissions**

**5**

**General Hazardous Waste Mgt.**

**5**

**Monitoring**

**3**

**Noise impacts**

**1**

**Open Burning/Open Detonation**

**2**

**Physical Treatment Processes**

**6**

**Shipboard Emissions**

**1**

**Waste Minimization/Recycling**

**1**



# CONSERVATION

---

35 Proposals evaluated

	11 Funded
Ecosystem Management	2
Multiple - Risk/Impact Assessment	1
Species/Genetic - Management	1
Species/Genetic - Resource Chara.	2
Species/Genetic - Risk/Impact Assess.	4
Watershed/Landscape - Management	1

# **Pollution Prevention**

<b>199 Proposals evaluated</b>		<b>40 Funded</b>
<b>Coatings</b>		<b>6</b>
<b>Data Base</b>	<b>1</b>	
<b>Diagnostic</b>	<b>3</b>	
<b>Haz. Material Subst.</b>	<b>7</b>	
<b>Haz. Material Process.</b>	<b>2</b>	
<b>Haz. Waste Reduction</b>	<b>4</b>	
<b>Mixed Waste</b>	<b>2</b>	
<b>Metal Working Process</b>	<b>2</b>	
<b>Ordnance Processing</b>	<b>5</b>	
<b>Ozone Depleting Substances</b>	<b>8</b>	

# **ENERGY**

**37 Proposals evaluated**

**12 Funded**

**Renewable (Solar)**

**1**

**Renewable (Biomass)**

**2**

**Renewable (other)**

**5**

**Efficiency Improvements**

**2**

**Energy Conservation Demos**

**2**

# Global Environmental Change

133 Proposals evaluated

6 Funded

Air/Ocean Interface Research

1

Atmospheric Research

3

Ocean Research

1

Terrestrial Research

1

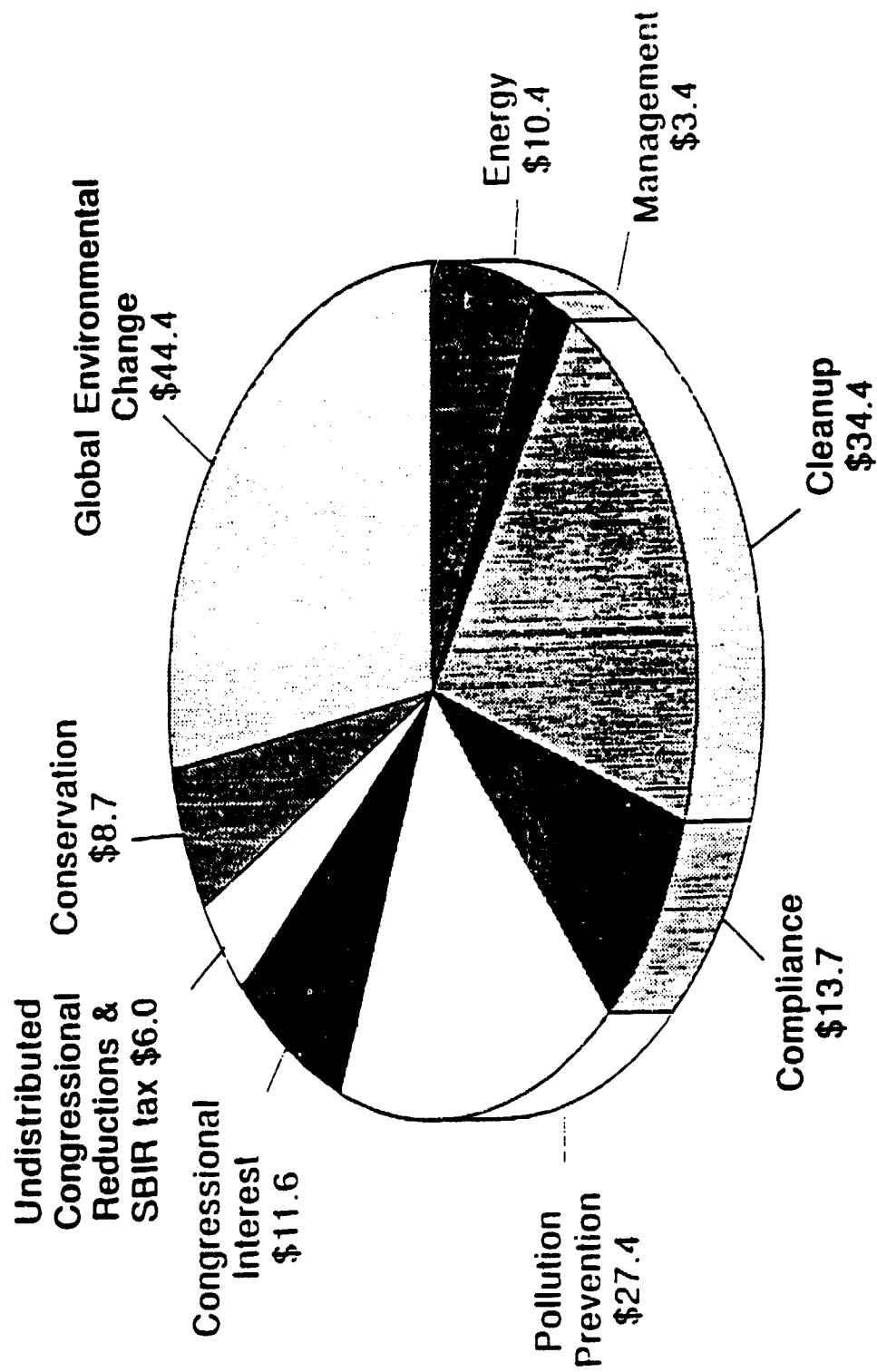
# FY94 SERDP Funding

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	\$ (K)
FY94 Appropriation	160,000
Congressional Undistributed Reductions (WHS):	4,569
SBIR Tax	1,398
	<hr/>
Available Program Funds	154,033
Management	3,400
Congressional Interest	11,625
	<hr/>
Available for Thrust Areas	139,008

# FY 1994 SERDP ALLOCATIONS BY THRUST AREA

Funding in \$ Millions; \$160M Appropriation

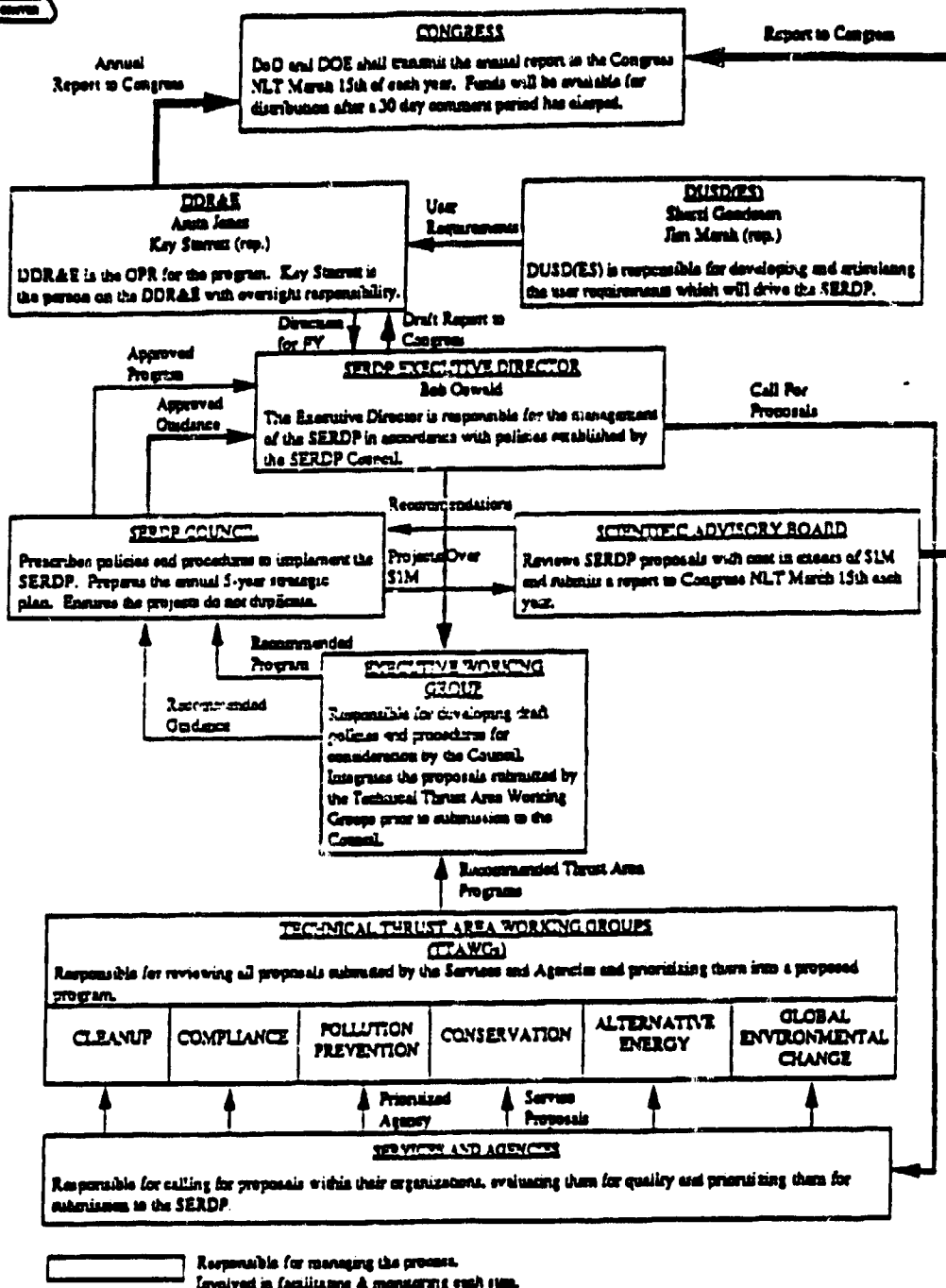




# ENVIRONMENTAL TECHNOLOGY AND RESEARCH

## SERDP PROCESS

1/28/94



## MECC R&D SUBCOMMITTEE

4/21/94

### ORGANIZATION CHANGES

#### EXECUTIVE DIRECTOR

DR BOB OSWALD STEPPING DOWN REPLACED BY  
DR JOHN HARRISON -- ARMY CORP OF ENGINEERS  
WATERWAYS EXPERIMENTAL STATION  
VICKSBURG

#### EXECUTIVE BOARD

• MR BRADLEY SMITH FROM DDR&E(E&LS) REPLACES	
DR KAY STERRETT RETIRING	
CLEM MEYER	ARMY
RON DEMARCO	NAVY
MAJ JEFF WIGLE	AIR FORCE



## **MECC R&D SUBCOMMITTEE**

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4/21/94

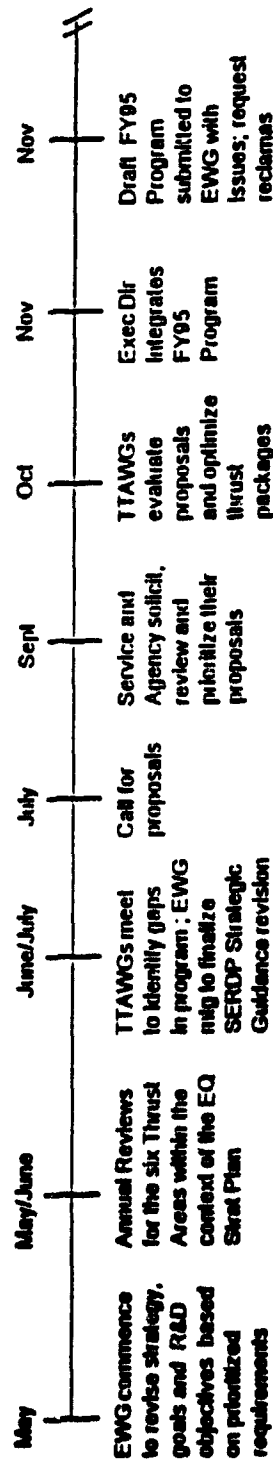
### **SERDP FY95**

- POSSIBLE COMPLETE CHANGE FOR FY95
  - TAILING FROM 92, 93, 94 CONSUME BUDGET
- SELECTED CALL FOR UPDATES TO ACCEPTED PROPOSALS
- SELECTED CALL TO FILL IN GAPS IN PROGRAM
- RESTRUCTURE PROGRAM TO FIT FY96 DOD BUDGET CYCLE

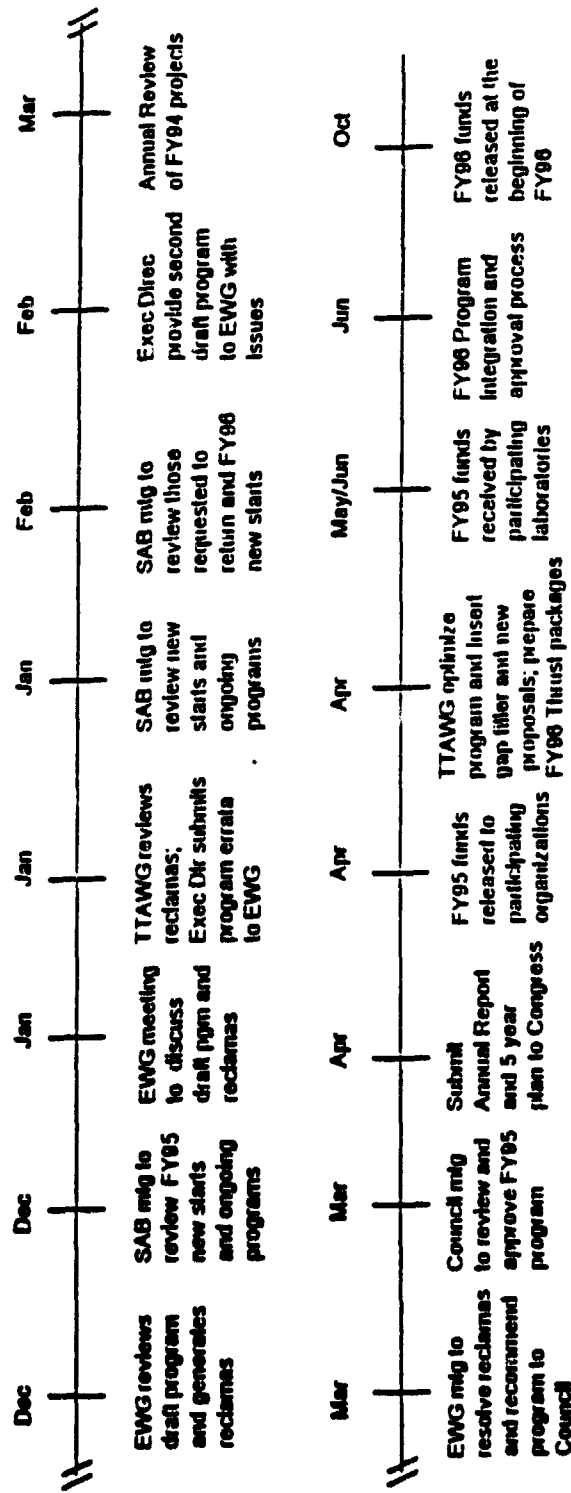
4/21/94

# SERDP FY95/96 PROGRAM DEVELOPMENT SCHEDULE (DRAFT)

1994



1995



Executive Briefing  
18 April 1994



by Carl S. Stephens PE, Chief

"Paving the technology highway"



## Overview

- Background
- Concepts
- Process/Progress
- Products
- Coordination
- Future



Technology: Army, Navy, Air Force, Marine Corps

18 APR 94

Approved for release by the Office of Management and Enterprise Services

18 APR 94



## Background

- SEP 87 Service acquires CADD contract to develop
- NOV 87 Service establishes CADD Ctr and WBS
- NOV 88 CADD Center expands activities to include GIS Technology
- SEP 91 CADD Center expands activities to include GIS Technology
- JAN 91 HQ, USACE establishes CADD Coordinator
- JUN 91 USACE formalizes Tri-Service CADD/GIS Technology Ctr at WBS
- AUG 92 Charter signed by all 3 services and USACE
- OCT 92 Tri-Service CADD/GIS Technology Center established at WBS
- AUG 93 Position CADD contracts awarded to Service & USACE
- JAN 94 CADD CTR established at the Tri-Service Ctr

18 APR 94

Approved for release by the Office of Management and Enterprise Services

18 APR 94

Army  
Dir. of Eng. & Housing (PwCs)  
Def. Mgt. Review Decision  
Civil Work Directorate



### Continuing Problems

- Using different systems
- New equipment compatibility
- Learning Curve
- Lack of commitment to train
- Lack of understanding of problems
- Difficult to Procure
- Technician's Tool



... ..



### Mission



- Provide an integrated spatial technology resource committed to the effective use of digital data for the entire facility and installation life cycle to improve DoD mission delivery

... ..



### Goals



- Reduce life-cycle cost through effective use of digital data
- Provide effective user solutions to installation problems
- Integrate technology to improve mission delivery
- Provide leadership and develop partnerships to leverage the technology

... ..



## Objectives



- Establish and promote education and training venues
- Organize providers and users to effectively transfer technology
- Build data standards for integration
- Lead technology applications

Public Information for the Office of the Secretary



## Functions



- Promote standards
- Promote communications
- Furnish technical advice
- Technical role in acquisition
- Direct applications development
- Interface with professional organizations and industry
- Evaluate technological developments
- Recommend necessary CADD/GIS policy

Public Information for the Office of the Secretary



## Current Status

- Funding
  - Military \$4 M \$2,330,000
  - Civil Works \$850,000
- Staffing (Army, Navy, AF)
  - Started 6
  - Current 16
  - Planned 10

FY 94

Public Information for the Office of the Secretary



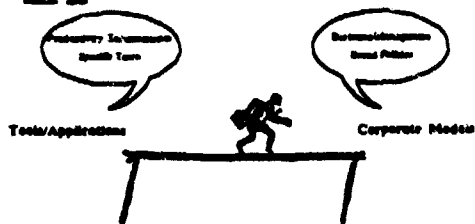
### Achievements

- First Tri-Service Symposium (400+) Feb '93
- Est CADD/GIS Bulletin Board Apr '93
- GIS/Spatial Data Standards Feb '94
- Generic Details Library Jan '94
- AEC CADD Standards Apr '94
- Workshops (8) FY '93-94
- Working Groups (38) FY '93-94
- COTR at WES (78) Jan '94

Additional accomplishments for the office of the Secretary of Defense



### Concepts



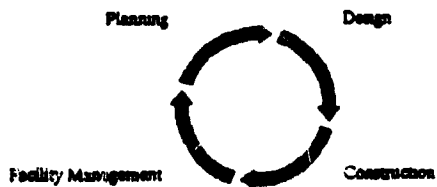
Additional accomplishments for the office of the Secretary of Defense

Integrated Corporate Approach:

Not interested in developing  
database  
but use graph/non-graphic



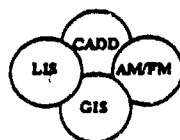
### Life-Cycle Project Approach



Additional accomplishments for the office of the Secretary of Defense

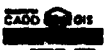


### Interrelationship of CADD, LIS, AM/FM, and GIS

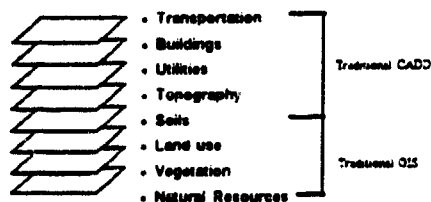


- CADD/GIS Technology are basic to all of the other Technologies
- With the passage of time, differences between CADD, LIS, AM/FM, and GIS are becoming less and less apparent

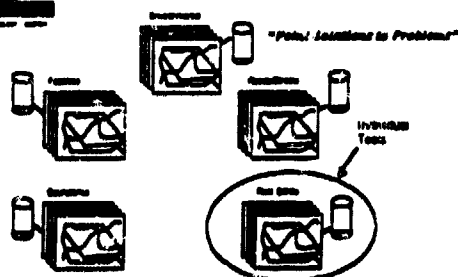
Land Info Systems  
PMIS - Army



### Applications of CADD/GIS



### Applications Model





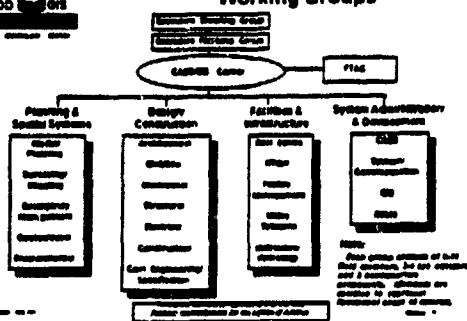
### Process Approach

- |  |  |
|--|--|
| <b>1. Define User Needs</b><br>Needs<br>Data<br>Work Breakdowns                  | <b>3. System Concepts</b><br>Applications<br>Hardware<br>Software<br>Networks      |
| <b>2. Data Definition</b><br>Graphics<br>Non-Graphics<br>Technology<br>Standards | <b>4. Implementation Plans</b><br>Budget<br>Procurements<br>Training<br>Consulting |

Public distribution for the following reasons



### Working Groups



Public distribution for the following reasons



### Field Working Groups Membership

<b>Service Breakdown</b>		<b>Professional Breakdown</b>	
• Corps	60	• Engineers	172
• Navy	60	• Active Military	30
• Air Force	60	• Architects	17
• Army	60	• Geographers	12
		• Physicists	4
		• Technicians	16

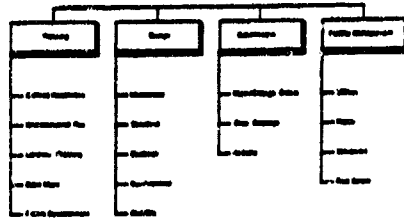
Public distribution for the following reasons





## Life Cycle Project Applications

- How we est. the processes

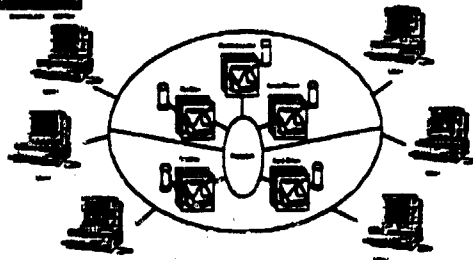


Public Information for the Project

- 1)
- 2) Data Definitions
- 3) Impl. Model  
- Pax
- 4) Develop Impl Strategies



## Corporate Model



Public Information for the Project



## Standards Initiatives



- Special Data Standards (SDS)
- Architectural/Engineering/Construction (AEC)
- Facility Management (FM)
- Comprehensive CADD/GIS Deliverable (A/E)

Public Information for the Project



### Spatial Data Standards



- Installation Planning - strategic planning
- Facility level on installations
- Environmental Studies
  - MTRM
  - MBR
  - Environmental studies
  - Executive design studies
  - HCU
  - Emergency management

Public information for the public domain



### Architectural/Engineering/Construction



- Design
- Inside the 5 feet line
- Interior Design
- Landscape architecture
- Engineering analysis
- Renovation/restoration
- As-Built documents

Public information for the public domain



### Facility Management



- Micro-Facility management vs planning
- Engineering analysis
- Space studies/space allocation
- Utility management
- Pest management
- Grounds management
- Maintenance records

Public information for the public domain



## A/E Standard Deliverable Document



- A/E Deliverable
- Project archiving
- Bid Documents
- CSD announcements
- Contract language

Public information for the public domain



## Industry Coordination

- ACCE - American Consulting Engineers Council
- ASCE - American Society of Civil Engineers
- AIA - American Institute of Architects
- NSPE - National Society of Professional Engineers
- FGDC - Federal Geographic Data Committee
- ACSM - American Congress of Surveying and Mapping
- ASPRS - American Society of Photogrammetry and Remote Sensing (AMPS International)
- URISA - Urban & Regional Information Systems Association

Public information for the public domain



## FGDC Subcommittees

Committee	Lead Agency
Base Cartographic	U.S. Geological Survey
Cadastral	Bureau of Land Management
Cultural & Demographic	Bureau of Census
Geodetic	Coast and Geodetic Survey
Geologic	U.S. Geological Survey
Ground Transportation	Federal Highway Administration
Soils	Soil Conservation Service
Vegetation	Forest Service
Wetlands	U.S. Fish and Wildlife Service
Bathymetry	Coast and Geodetic Survey

Public information for the public domain



## NAVFAC Contract

- Approval: \$1.06 Billion (4Contracts)
- Type: Requirements Contract
- Period: Contract Life
  - 3 - Year Base
  - 5 - One year options Purchase
  - 4 - One year options Maintenance
- Workstations: 3 Levels of Unit Stations
- Software: Facilities

--- --

Available information for the selection of software

--- --



## Facilities Engineering Applications

### Major Software Packages Available:

Survey Mapping	HVAC	Performance/Planning Tools
Geographic Information	Planning	Environmental Engineering
Facilities Master Planning	Pipe Network Analysis	Electrical Analysis
Utilities Management	Energy Analysis	Interior Electrical
Digital Terrain Modeling	Pipe Protection	Order Scheduling
Image Processing	Surveying	Inventory Listing
Automated Building Programming	Site Modeling	Structural Analysis
Architectural Drawing	Asset Mobility	Structural Modeling
Master Plans and Space Management	Water Supply Systems	Customs, Military, Timber
Landmark Architecture	Watermain Design	Tactical Software
		Gridding

--- --

Available information for the selection of software

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## Benefits

*from having standards*

- Cost Saving
  - Productivity Enhancement
  - Reduced Errors
- Resources
  - Data Integration/Consistency
  - Decision Analysis
    - Decisions
    - Installation
    - Changes

--- --

Available information for the selection of software

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## The Future

- Open Architecture/Standard and Consistent Data
- More Interoperability with PCs
- Multi-Vendor Partnerships
- Industry Partnerships
- Government Partnerships

...

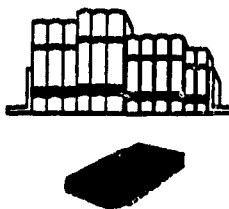
Future developments for the system of records

...

## QUESTIONS?



## Center Documents



- ◆ ABC Standards
- ◆ Spatial Data Style
- ◆ Facility Mgt. Style
- ◆ A/E Deliverable Doc
- ◆ Archiving Record Change
- ◆ Library of Details
- ◆ Guide to Providing Data to A/E
- ◆ Port Directory
- ◆ Miscellaneous

...

Future developments for the system of records

...

**GEOGRAPHIC INFORMATION SYSTEMS**

## **GEOGRAPHIC INFORMATION SYSTEM**

The Geographic Information System (GIS) subcommittee met on the third day of the workshop to discuss current initiatives in the area of GIS. Ms. J!!! Cicierski of the Naval Air Warfare Center, Aircraft Division (NAWC-AD) at Patuxent River, Maryland, chaired the session. A variety of subjects were covered including: subcommittee goals and objectives, spatial data standards for geographic information systems, the Resources Automated Management System (RAMS) development program, MRTFB GIS requirements, the Defense Environmental Corporate Information Management (DECIM) initiative, and MRTFB efforts to implement GIS.

Ms. Cicierski, the subcommittee chairperson, opened the session with a discussion of the subcommittee's goals and objectives for the upcoming year. The subcommittee has been asked to provide technical oversight and coordination for the GIS Network project being funded by the Central Test and Evaluation Investment Program. Ms. Cicierski, the project manager, provided an overview of the project. She has been tasked to provide a report on the status of GIS implementation at the MRTFB and requirements for networking the stand-alone systems in support of the test and evaluation mission. The subcommittee discussed issues and concerns regarding the execution of the project. They agreed to review the scope of the project and provide comments to Ms. Cicierski within two weeks.

Next, initiatives to establish a spatial data standard for GIS on both a tri-service and federal government-wide level were discussed. Ms. Cicierski updated the subcommittee on the involvement of the NAWC-AD at Patuxent River in the development and review of the draft Tri-Service standards. The Tri-Service CADD/GIS Technology Center at Patuxent River and the DECIM initiative were also discussed.

The last part of the session focused on specific GIS-related initiatives at the MRTFB. Ms. Cicierski provided an overview of several initiatives being undertaken at the NAWC-AD at Patuxent River. One of the items she discussed was the status of the RAMS project, of which GIS is a key component. Mr. Sean McMorow briefed the subcommittee on the successful implementation of GIS at Edwards Air Force Base.

# **MECC GIS PANEL TOPICS**

**STANDARDS DEVELOPMENT**

**MRTFB GIS EFFORTS**

**GIS LIFE-CYCLE MANAGEMENT**



## BACKGROUND

**MRTFB Environmental Coordinating Committee (MECC):**  
GIS Subcommittee Goal of GIS Interoperability by FY96

**Tri-Service CADD/GIS Technology Center - Spatial Data Standards (TSSDS)**

**Spatial Data Transfer Standards (SDTS) - FIPS 173**

**Federal Geographic Data Committee (FDGC) - Data Standards**

**Patuxent River:**

**Oversite Management Tri-Service Base Comprehensive Planning Effort**

**(Test Sites: Edwards, Aberdeen, and Pax)**

**Established an Automated Mapping/GIS Test Suite**  
**Navy TSSDS Test Site (Cultural Resources & Wetlands)**

**FGDC Subcommittee Membership for Tri-Service**

**MECC GIS Subcommittee Chairperson**


**MECC NEPA Subcommittee Member**

*Tri-Service Environmental Field Working Group Member*




## COMPREHENSIVE BASE PLANNING USING GEOGRAPHIC INFORMATION SYSTEM (GIS) TECHNOLOGY

AIR FORCE RESEARCH AND DEVELOPMENT  
PROJECT NUMBER: AFOSR-89-0001  
SPRINGFIELD, MA 01115-1000



## AGENDA

- GIS ACQUISITION STRATEGY
- PARTICIPANTS AND ROLES
- PILOT PROJECT
- LIFE CYCLE ISSUES
  - ACQUISITION
  - O&M
- KEY ISSUES



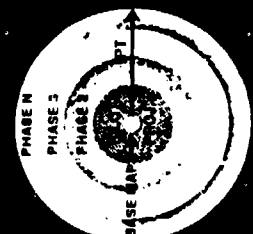

## AGENDA

# GIS ACQUISITION STRATEGY

## GIS ACQUISITION STRATEGY

### PHASED APPROACH

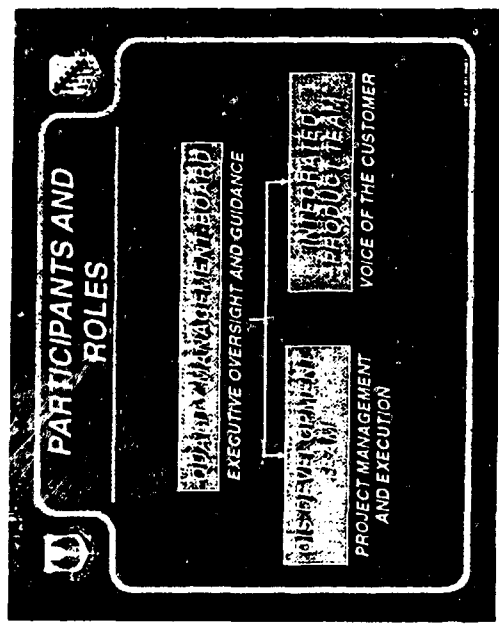


- BEGIN WITH LESSONS FROM OTHER INSTALLATIONS (FT. BRAGG, PAFB)
- USE IPT TO HEAR "VOICE OF CUSTOMER"
- BEGIN WITH PILOT PROJECT
- ESTABLISH BASELINE GIS CAPABILITY
- UPDATE IMPLEMENTATION PLAN BASED ON LESSONS LEARNED
- SUCCESS THROUGH INCREMENTAL PHASING



# AGENDA

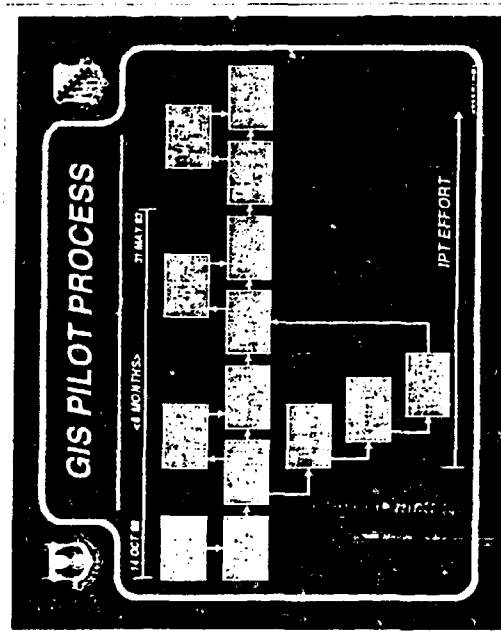
## PARTICIPANTS & ROLES





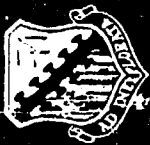
# AGENDA

## PILOT PROJECT





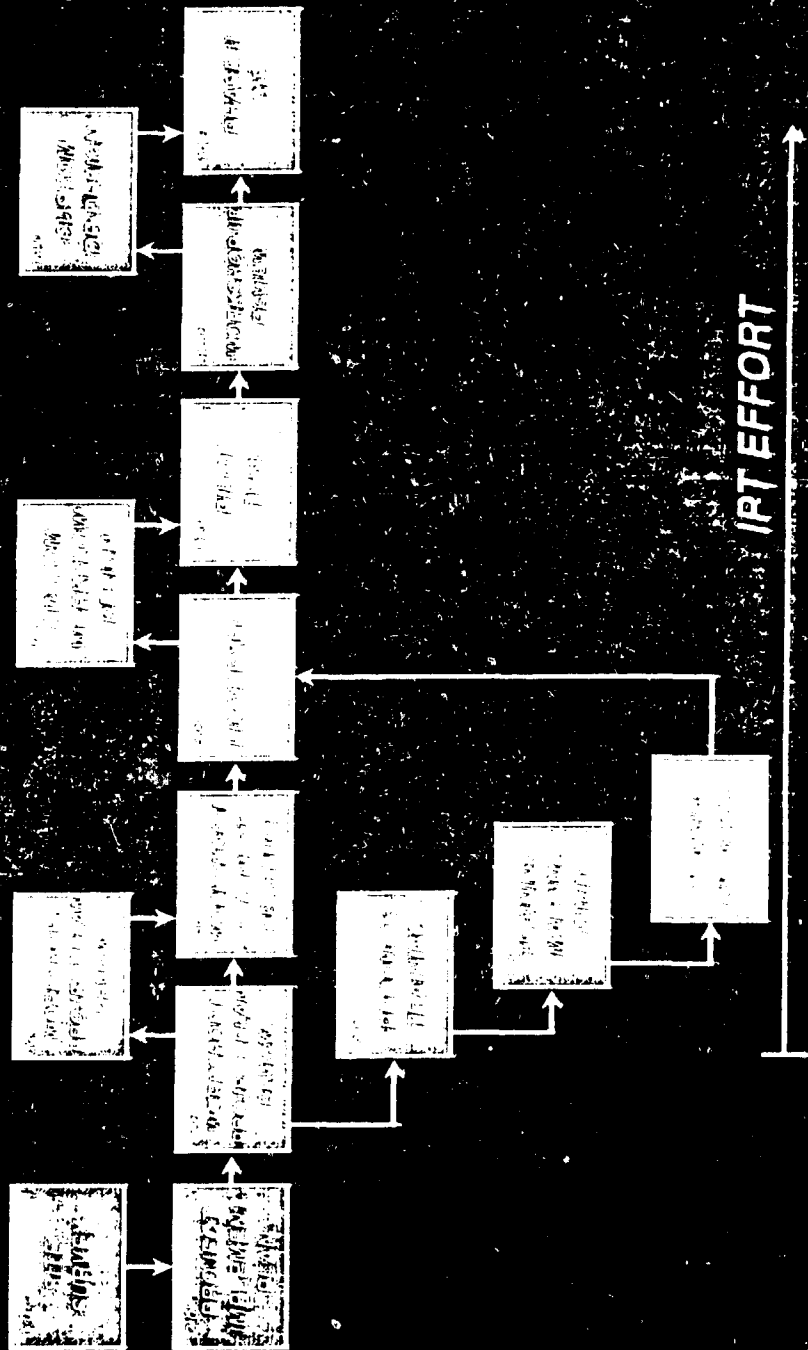
# GIS PILOT PROCESS



14 OCT 92

< 8 MONTHS >

31 MAY 93



DISAPPROPRIATE PAGE 17

## PILOT PROJECT RESULTS

### ESTABLISH BASELINE GIS CAPABILITY AT EAFB

- IDENTIFY REQUIRED RESOURCES (PEOPLE, EQUIPMENT, DATA)
- DOCUMENT AND IDENTIFY PROCESSES TO UTILIZE THE GIS
- PROJECT AND DOCUMENT BASE MAP MAINTENANCE O&M COSTS

### IDENTIFY CHALLENGES FOR FULL GIS IMPLEMENTATION

- TECHNOLOGICAL
- ORGANIZATIONAL

### DEMONSTRATE THE TECHNOLOGY

- PROCESSES
- PRODUCTS

## PILOT PROJECT RESULTS - (cont)

### PROCESS IMPROVEMENTS

- DOCUMENT EXISTING PROCESSES WITH CORRESPONDING METRICS
- IDENTIFY/IMPLEMENT PROCESS IMPROVEMENTS
- COLLECT METRIC DATA AND EVALUATE RESULTS

### REFINE EXISTING IMPLEMENTATION PLAN

- DEFINE CONTENTS OF IMPLEMENTATION PHASES
- DEVELOP IMPLEMENTATION SCHEDULE
- IDENTIFY PROJECTED COSTS
- INCORPORATE LESSONS LEARNED

## AGENDA

### LIFE CYCLE ISSUES

## AGENDA

### ACQUISITION DEVELOPMENT

## ACQUISITION DEVELOPMENT

- PILOT PROJECT
- FINAL REPORT
- UPDATED IMPLEMENTATION PLAN
- PHASE II
- A & B TAB SERIES
- DATA ENTRY
- MAP PRODUCTION
- 2 PAGE NARRATIVE FOR BCP

## ACQUISITION DEVELOPMENT (cont)

- PHASE II (cont)
- C, G & H TAB SERIES
- DATA ENTRY
- MAP PRODUCTION
- UTILITIES LIMITED TO MAINS
- COMM - LIMITED TO DUCTS & MANHOLES
- PHASE III
- PHASE IV
- FOLLOW-ON PHASES
- SYSTEM CAPABILITY SHALL EVOLVE WITH CUSTOMER NEEDS

## GIS PHASE IV

- A - NATURAL RESOURCES (PHASE II)
- B - ENVIRONMENTAL QUALITY (PHASE II)
- C - BASE LAYOUT & VICINITY (PHASE II)
- D - LAND USE
- E - AIRFIELD OPERATIONS
- F - AIR INSTALLATION COMPATIBILITY USE ZONES
- G - UTILITIES
- H - COMMUNICATIONS
- I - TRANSPORTATION
- J - ENERGY (NOT IN SOW)
- K - ARCHITECTURE COMPATIBILITY (NOT IN SOW)
- L - BASE LANDSCAPE DEVELOPMENT (NOT IN SOW)
- M - FACILITY DEVELOPMENT (NOT IN SOW)
- N - FIRE PROTECTION (NOT IN SOW)
- O - CONTINGENCY PLAN
- P - BCP NARRATIVES

## AGENDA

## OPERATIONS AND MAINTENANCE

## • OPERATIONS AND MAINTENANCE

- CONCEPT OF OPERATIONS
- O&M RESOURCES
  - SPACE
  - PEOPLE
  - TRAINING
  - EQUIPMENT
  - MAINTENANCE

## CONCEPT OF OPERATIONS

- ACCESS
- SUPPORT SERVICES
- DATA
- QUALITY ASSURANCE (QA)
  - CUSTOMER QA
  - TECHNICAL QA

## CONCEPT OF OPERATIONS

-(cont)

- QUALITY ASSURANCE (cont)
- TECHNICAL QA - OPERATIONS INSTRUCTIONS
  - CUSTOMER SERVICE
  - SYSTEM ADMINISTRATION & CONTROL
  - DATABASE ADMINISTRATION & CONTROL
  - GIS USER GROUP
  - QUALITY MANAGEMENT
  - STANDARDS
  - CONVENTIONS

## CONCEPT OF OPERATIONS

(cont)

- QUALITY ASSURANCE (cont)
- TECHNICAL QA - OPS INSTRUCTIONS (cont)
  - TECHNICAL LIBRARY
  - GPS EQUIPMENT MANAGEMENT
  - GIS PROPERTY MANAGEMENT
  - WORKFLOW DEVELOPMENT/MAINTENANCE
  - CHANGE CONTROL BOARD (CCB)
  - PROBLEM REPORTING & TRACKING
  - DATA VALIDATION

## AGENDA

### O&M RESOURCES



## O&M RESOURCES

- SPACE
- PEOPLE
- TRAINING
- EQUIPMENT

## AGENDA

### KEY ISSUES



## KEY ISSUES

- MANAGEMENT SUPPORT
- CULTURE CHANGE
- DATA COMPATIBILITY
- CLEAR OBJECTIVES / SCOPE / REQUIREMENTS
- IMPLEMENTATION PROCESS
- PILOT PROJECT
- PROPER TOOL TO MEET NEEDS
- RESOURCES
- OPERATION & MAINTENANCE PROCEDURES
- COMMUNICATION
- TRAINING
- LEVERAGE FUNDING





NAWC AD  
PATUXENT RIVER  
GIS EFFORTS

*Jill Cicierski, (301) 826-1227  
Range Directorate NAWC AD Patuxent River*

# **TOPICS**

**RESOURCES AUTOMATED MANAGEMENT SYSTEM**

**BASE COMPREHENSIVE PLANNING OVERSITE MANAGEMENT**

**MRTFB GIS REQUIREMENTS ANALYSIS**

**DECIM/INSTALLATION CIM**

**FY95 PLANS**

# **RAMS**

**OVER 70 DATA LAYERS**

**FIVE INSTALLATIONS OF DATA, PLUS EAST COAST**

**EASY-TO-USE**

**22 USER LICENSES AT PAX RIVER**

**DIVERSE UTILIZATION**

# **COORDINATION**

**Tri-Service CADD/GIS Technology Center - Tri-Service Spatial Data Standards  
Federal Geographic Data Committee - Standards  
Spatial Data Transfer Standards (SDTS) Task Force - FIPS 173  
U.S. Navy Installation Life-Cycle Management Program (NAVFAC)  
Naval Air Systems Command (AIR-09Y)  
Naval Sea Systems Command (NAVSEA)  
U.S. Navy Research Laboratory (NRL)  
Sec of AF/Defense LANDSAT Program Office (DLPO)  
USAF AIRSTAFF Environmental Office  
U.S. Army Civil Engineering Research Laboratory (CERL)  
U.S. Army Cold Regions Research and Engineering Laboratory (CRREL)  
Defense Environmental Corporate Information Management (DECIM) Program  
Joint Ordnance Commanders Group  
U.S. Geologic Survey  
U.S. Soil Conservation Service  
National Oceanic and Atmospheric Administration (NOAA)  
National Marine Fisheries Service  
U.S. Fish & Wildlife Service  
Other Organizations, Activities, and Federal Agencies  
Federal Emergency Management Agency (FEMA)  
MRTFB Environmental Coordinating Committee GIS Subcommittee**

# **SPATIAL INFORMATION TECHNOLOGY TO SUPPORT**

**NEPA ANALYSIS  
CONSTRAINTS ANALYSIS  
RDT&E MISSION PLANNING  
RANGE SAFETY MANAGEMENT  
BASE REALIGNMENT AND CLOSURE PLANNING  
RESOURCES MANAGEMENT  
FACILITY ASSETS MANAGEMENT  
FACILITY MASTER PLANNING  
RANGE MASTER PLANNING  
AICUZ/RAICUZ PLANNING  
MAINTENANCE PLANNING  
NATURAL & CULTURAL RESOURCES MANAGEMENT  
ENVIRONMENTAL COMPLIANCE  
PHYSICAL SECURITY MANAGEMENT  
AVIATION SAFETY  
EMERGENCY RESPONSE  
PLANT PROPERTY INVENTORY  
HAZARDOUS MATERIAL/WASTE MANAGEMENT**

# **BCP OVERSITE MANAGEMENT**

**DRAFT IMPLEMENTATION OF TRI-SERVICE SPATIAL DATA  
STANDARDS FOR COMPREHENSIVE PLANNING/MASTER  
PLANNING AT DoD INSTALLATIONS: TSSDS AM/GIS  
ASSESSMENT REPORT.**

**MOVEMENT TOWARDS PROVIDING STANDARDIZATION FOR  
AUTOMATION OF BCP TO ENHANCE CONSISTENCY OF DATA  
ACROSS DIFFERENT AM/GIS PLATFORMS.**

# **BCP INCLUDES:**

**ENGINEERING DESIGN INFRASTRUCTURE**

**MASTER PLANNING**

**RANGE SUPPORT**

**OPERATIONS & MAINTENANCE**

**ENVIRONMENTAL COMPLIANCE, CONSERVATION, & REPORTING**

**AIR BASE OPERABILITY**

**FACILITY MANAGEMENT & ENGINEERING**

**EMERGENCY MANAGEMENT & RESPONSE**



# PROPOSAL

**TO DEVELOP A NETWORKED SPATIAL AND TABULAR INFORMATION  
MANAGEMENT SYSTEM CAPABILITY UTILIZING:**

PC or Mac-based User-Friendly Commercial Off-the-Shelf (COTS) Software  
Existing Spatial/Geographic Data  
Existing GIS Platforms

**TO DEVELOP AN MRTFB SPATIAL INFORMATION MANAGEMENT (SIM)  
IMPLEMENTATION PLAN:**

Identify External Databases or Systems to be linked to the SIM System  
(ie. Test Scheduling System, TECNET, etc.)  
Identify T&E Range Components for the TSSDS

**EVALUATE DATA SHARING CAPABILITY AND CAPACITY**

**ENHANCE THE ENVIRONMENTAL COMPONENTS OF THE TSSDS**

## PURPOSE

TO ESTABLISH A DESKTOP TOOL FOR ACCESS TO GEOGRAPHICALLY  
REFERENCED/SPATIAL DATA AND RELATIONAL DATA FOR ALL LEVELS  
OF DECISION MAKERS

THE KEYS TO AN EFFECTIVE TOOL FOR DECISION MAKERS ARE:

User-Friendly Operating Environment

Data Integrity (Accurate, Timely Data)

Use of Existing Resources (Data, Computers)

A Standardized Data Structure for Future Expandability &  
Interoperability

# MRTFB ACTIVITIES IN A DoD GIS SURVEY (for Environmental Mgt)

Combat Systems Test Activity - Aberdeen  
Arnold Engineering Development Center (AFB)  
Dugway Proving Ground

Air Force Flight Test Center - Edwards AFB

Air Force Development Test Center - Eglin AFB

Electronic Proving Ground - Fort Huachuca

NAWC AD Patuxent River

NAWC WPNS China Lake

Weapons Tactics Center - Nellis AFB

Air Force Space Command (Eastern Range) - Patrick AFB

Air Force Space Command (Western Range) - Vandenberg AFB

White Sands Missile Range

Yuma Proving Ground

Utah Test and Training Range - Hill AFB

Tri-Service Technology Center Report (Draft)  
Expected Jun 94

14 STEPS TO  
IMPLEMENTING  
CADD/GIS TECHNOLOGY  
SUCCESSFULLY

- 1) Formulate a Corporate Investment Plan  
for CADD/GIS Implementation**
- 2) Get a "Willingness to Change Business  
Practices" Attitude**
- 3) Adopt an Open Systems Approach**
- 4) Create an Information Systems (IS) User  
Group with Representation From  
All Directorates & Divisions**
- 5) Make GIS the Core to the IS Technology**

- 6) Appoint Personnel Resources as  
Systems Administrator(s)**
- 7) Establish a Centralized Integration Point  
to Ensure Data Accuracy & Integrity**
- 8) Define & Prioritize User Requirements**
- 9) Acquire Spatial Data to the Accuracy that  
Meets Your Corporate Needs**
- 10) Embrace the Tri-Service Spatial Data Standards**

- 11) Encourage Cooperation & Coordination  
With Other Federal, State, & Local Agencies  
for GIS Technology & Data Exchange**
- 12) Establish Local Policy & Procedures for  
Data Acquisition, Integration,  
Maintenance, and Distribution**
- 13) Establish Data Custodians Responsible  
for Updating the Centralized Data Point**
- 14) Make a Commitment to Corporate Training**

**NATIONAL ENVIRONMENTAL POLICY ACT COMPLIANCE**



## NATIONAL ENVIRONMENTAL POLICY ACT COMPLIANCE

The National Environmental Policy Act (NEPA) Compliance subcommittee met on the third day of the workshop to discuss efforts to be undertaken by the subcommittee over the next year. Several specific tasks were identified during discussions.

There was a great deal of discussion regarding the desire to push for baseline environmental documents for each of the MRTFB facilities. Peggy Hoffer, from White Sands Missile Range, pointed out that having a baseline document will not be a panacea for all NEPA requirements. In the end, the subcommittee decided to develop a questionnaire to be sent to all MRTFB facilities. The goal of the questionnaire is to find out what type of NEPA or other environmental analysis each facility has done.

The plan for developing the questionnaire is for each subcommittee member to send a straw-man questionnaire to Ken Amster, the subcommittee chairman. This will provide an idea of what everyone thinks is important. Ken will combine all of the straw-men into one document and send it back to the subcommittee members for review and comment. The target is to get the comments back in time to summarize them and modify the questionnaire before the quarterly MECC meeting this summer. The plan is for the subcommittee to approve the questionnaire at the quarterly meeting and to develop a mailing list of recipients at each MRTFB.

Other potential efforts discussed by the subcommittee include the opportunity to participate in the review of NEPA requirements as they relate to the acquisition process. The Office of the Deputy Under Secretary of Defense (Environmental Security) is reviewing Section 6, Part I of Department of Defense Directive 5000.2. This section deals with the environmental analyses required for acquisition programs. The MECC has been approached to assist and comment on the environmental analysis process. Another related effort involves the development of a white paper on environmental issues in the test and evaluation area being undertaken by Christine Jordan at the Institute for Defense Analyses. This paper will address the effects of NEPA and other regulations on the test and evaluation mission. Christine is looking for inputs from the subcommittee. Anyone interested in assisting with either of these efforts should contact the subcommittee chairman, Ken Amster.

The following list of subcommittee members was compiled.

Ken Amster	Maj. Tracy Bailey
Susan Barrow	Jesse Borthwick
Jill Cicierski	John Creswell
Ron Dow	Karen Hay
Tom Heffernan	Peggy Hoffer
James Manton	Valerie Morrell
William Newton	John O'Gara
Robert Smith	Beth Vanta
Janet Vanderhoff	Cheryl Weiss

**PUBLIC INVOLVEMENT**

Input not provided at time of publication.

**MRTFB ENVIRONMENTAL COORDINATING COMMITTEE (MECC)  
PUBLIC INVOLVEMENT SUBCOMMITTEE**

**TALKING PAPER**

**ON**

**PUBLIC OUTREACH ACTIVITIES**

Environmental public outreach on MRTFB facilities should center upon the themes present in the MECC charter:

- 1) supporting the MRTFB mission through sound cooperative environmental stewardship, and
- 2) providing...ideas which provide intelligent, more efficient and cleaner testing in order to prevent or ameliorate future environmental impacts and constraints.

- These themes should be understood and localized at each MRTFB by the commanding officer and his Public Affairs staff.

- These themes should regularly be built into community relations events and media opportunities. Internal information should regularly focus on local positive environmental efforts such as pollution prevention technology in use on the facility, effective environmental planning and the positive opportunities for natural and cultural resource stewardship on MRTFBs. (Build in the positive environmental message like we build in the positive safety message.)

Recommend we use existing public affairs support areas such as DOD-level civic leader tours and service-level media interaction to get out the positive environmental stories.  
NOTE: Compliance efforts are intended to be local in focus; public outreach is "the big picture" opportunity for services and DOD.

Because MRTFBs regularly plan, program and employ advanced technology, and because they are unique in the vastness of the land, water and airspace they oversee, members of the MECC are in an ideal position to act as a conduit for environmental stewardship and environmental RDT & E success stories to the service and DOD levels. Direct communication between these levels should be encouraged to facilitate timely understanding and development of "good news" environmental stories.

25 April 1994

OPR: Janet Tucker, MECC Public Involvement Subcommittee member

## ENVIRONMENTAL PUBLIC INVOLVEMENT



OFFICE & PHONE  
PUBLIC AFFAIRS DIVISION (U.S. ENVIRONMENTAL  
ADMINISTRATION, PUBLIC INVOLVEMENT, COMMUNITY  
RELATIONS, AND REGULATORY DEVELOPMENT, OFFICE 1000  
CHERRY LANE, CA 94025-5090  
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FAC: (415) 775-1000

## ENVIRONMENTAL PUBLIC AFFAIRS

### TWO MAJOR FUNCTIONS

- PUBLIC OUTREACH
  - COORDINATE AND PROMOTE PUBLIC OUTREACH AND PUBLIC AWARENESS OF ENVIRONMENTAL PROGRAMS AND ACTIVITIES
  - INTEGRATE ENVIRONMENTAL TOPICS INTO EXISTING PUBLIC AFFAIRS PROGRAMS, I.E. INTERNAL / EXTERNAL PUBLICATIONS, AUDIOVISUAL PRESENTATIONS, MEDIA RELEASES, AUDIOVISUAL NEWS RELEASES
- PUBLIC INVOLVEMENT
  - MANDATED BY FEDERAL ENVIRONMENTAL LAWS
  - ESTABLISH A PUBLIC INVOLVEMENT PROGRAM
  - DEVELOP PUBLIC INVOLVEMENT PLANS
  - IMPLEMENT PUBLIC INVOLVEMENT PLANS

## PUBLIC INVOLVEMENT

- PUBLIC INVOLVEMENT = "PUBLIC RELATIONS"
- PUBLIC INVOLVEMENT = "PUBLIC AFFAIRS"

PUBLIC INVOLVEMENT IS A PROCESS BY WHICH INTERESTED AND AFFECTED INDIVIDUALS, ORGANIZATIONS, AGENCIES, AND GOVERNMENT ENTITIES ARE CONSULTED AND INCLUDED IN GOVERNMENT DECISIONMAKING.

## PUBLIC INVOLVEMENT

- TWO-WAY COMMUNICATION PROCESS
  - DIALOG WITH THE PUBLIC
  - WHO IS THE "PUBLIC"
  - USED THROUGHOUT THE DECISION-MAKING PROCESS
- GOALS
  - IDENTIFY PUBLIC CONCERNS AND VALUES
  - GATHER AND SHARE INFORMATION
  - INFORM THE PUBLIC
  - DEVELOP A CONSENSUS
  - DEVELOP AND MAINTAIN CREDIBILITY

## PUBLIC INVOLVEMENT



- LEGAL REQUIREMENTS
- PUBLIC'S CONCERN AND INTEREST
- PUBLIC'S RIGHT TO BE INFORMED AND INVOLVED
- USE PUBLIC INPUT TO MAKE BETTER DECISIONS

UNCLASSIFIED

## MAJOR FEDERAL STATUTES FOR PUBLIC INVOLVEMENT

UNCLASSIFIED



- ADMINISTRATIVE PROCEDURE ACT (1946)
- NEPA (1969)
- COUNCIL ON ENVIRONMENTAL QUALITY REGULATIONS (1970)
- FREEDOM OF INFORMATION ACT
- RESOURCES CONSERVATION AND RECOVERY ACT
- SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III (1986) (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW)
- COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT
- NATIONAL CONTINGENCY PLAN

UNCLASSIFIED

## WHY BOTHER WITH PUBLIC INVOLVEMENT?

UNCLASSIFIED



- IT INFORMS
- IT HELPS DEVELOP TRUST
- IT HELPS AVOID MISUNDERSTANDING
- IT PROVIDES AGENCIES WITH VALUABLE INFORMATION

BUT...

UNCLASSIFIED

## THE BOTTOM LINE IS:

UNCLASSIFIED



THE PUBLIC HAS  
A RIGHT TO KNOW!!!



UNCLASSIFIED

UNCLASSIFIED



## TEAM APPROACH

- COMMAND
- PUBLIC AFFAIRS → THE
- ENVIRONMENTAL ← PUBLIC
- LEGAL

UNCLASSIFIED

UNCLASSIFIED



## PUBLIC INVOLVEMENT

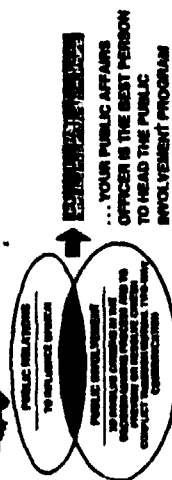
- THROUGHOUT THE DECISION-MAKING PROCESS
- NEPA
- CERCLA
- RCRA
- EPCRA

UNCLASSIFIED

UNCLASSIFIED



## WHO "DOES" PUBLIC INVOLVEMENT



UNCLASSIFIED

## PUBLIC INVOLVEMENT PERMEATES NEPA

- EAs
- PUBLICLY AVAILABLE
- FONSI, NOAs, NOAs, RODs
- PUBLIC NOTIFICATIONS
- SCOPING
- PUBLIC PROCESS
- DRAFT / COMMENTS / FINAL EIS
- REVIEW BY THE PUBLIC

UNCLASSIFIED



UNCLASSIFIED

## PUBLIC INVOLVEMENT IN RCRA ACTIVITIES

- GOAL.
- GIVE THE PUBLIC THE OPPORTUNITY TO AFFECT DECISIONS ABOUT HAZARDOUS WASTE MANAGEMENT
- RCRA ACTIVITIES
- PERMIT REVIEW OF APPLICATIONS
- ISSUANCE OF PERMITS
- IMPLEMENTATION OF CORRECTIVE ACTION PROGRAMS
- APPROVAL OF CLOSURE PLANS
- CERTIFICATION OF CLOSURES

UNCLASSIFIED

UNCLASSIFIED

## EMERGENCY PLANNING AND COMMUNITY RIGHT - TO - KNOW ACT (EPCRA)

- EXECUTIVE ORDER 12680 (AUG 2, 1983)
- "FEDERAL COMPLIANCE WITH RIGHT - TO - KNOW LAWS AND POLLUTION PREVENTION REQUIREMENTS"
- MANDATED FEDERAL AGENCIES TO COMPLY WITH ALL PROVISIONS OF EPCRA (PAMA TITLE III) BEGINNING JANUARY 1984
- FOUR MAJOR SECTIONS TO EPCRA
  - EMERGENCY PLANNING (SEC. 301 - 303)
  - EMERGENCY NAVIGATION (SEC. 304)
  - COMMUNITY RIGHT - TO - KNOW (SEC. 312) REPORTING
  - TOXIC CHEMICAL RELEASE INVENTORY (SEC. 313) (TTRI) REPORTING

UNCLASSIFIED

UNCLASSIFIED

## PUBLIC INVOLVEMENT IN EPCRA ACTIVITIES

- EXECUTIVE ORDER 12680 (8 - 800)
- USED IMPLEMENTING GUIDANCE FOR EXECUTIVE ORDER 12680 (FEBRUARY 1984)
- PUBLIC INVOLVEMENT AND COMMUNITY AWARENESS ARE TWO BASIC TENETS OF E. O. 12680
- ACCORDING TO PUBLIC INVOLVEMENT
  - PROCESS OF DEVELOPING AGENCY STRATEGIES
  - PROCESS OF MEETING E. O. REQUIREMENTS (I.E. PUBLIC MEETINGS, HEARINGS, NOTICES)
  - POLLUTION PREVENTION PLANS, STRATEGIES AND REPORTS MADE AVAILABLE TO PUBLIC

UNCLASSIFIED

MARLYN K. HULL  
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)  
WASHINGTON, D.C.

## RECOMMENDATIONS OF THE FEDERAL FACILITIES ENVIRONMENTAL RESTORATION DIALOGUE COMMITTEE

IX-86

FFER COMMITTEE BRIEFING

2

### AGENDA

- I. GOAL AND HISTORY OF THE FFER COMMITTEE
- II. SUMMARY OF THE RECOMMENDATIONS
- III. NEXT STEPS OF THE COMMITTEE
- IV. DISCUSSION PERIOD AND PRESENTATIONS BY AFFECTED CITIZENS
- V. BREAK
- VI. SMALL GROUP DISCUSSIONS
- VII. CLOSING REMARKS

### I. GOAL AND HISTORY OF THE FFER COMMITTEE

*"The goal of the FFER dialogue committee is to develop consensus recommendations aimed at improving the process by which federal facility environmental restoration decisions are made, such that these decisions reflect the priorities and concerns of all stakeholders."*

FFER COMMITTEE BRIEFING

3

### IN OTHER WORDS:

- To Address the Lack of Mutual Trust
- To Change the Decide, Announce, Defend Mode of Decisionmaking
- To Ensure that Decisions Reflect the Priorities and Concerns of all Stakeholders

FFER COMMITTEE BRIEFING

4

#### FORTY FFER PARTICIPANTS:

- Federal Agencies (DOD, DOE, EPA, DOI, USDA, NOAA, NASA, ATSDR)
- Tribal Governments and Associations
- State Governments and Associations
- Citizen, Environmental, and Labor Organizations

FFER COMMITTEE BRIEFING

5

#### THE CONSENSUS PROCESS

- "Consensus" means no dissent by any member of the Committee
- Each recommendation was negotiated word-by-word
- The process was not intended to bind any organization or agency
- All signatories agree to work proactively towards the implementation of the consensus recommendations
- The Committee did not reach full agreement on three issues

FFER COMMITTEE BRIEFING

6

#### II. RECOMMENDATIONS OF THE FFER COMMITTEE

- A. Improving the dissemination of FFER-related information
- B. Improving stakeholder involvement
- C. Improving consultation on FFER funding decisions
- D. Improving mechanisms for setting priorities in the event of funding shortfalls

FFER COMMITTEE BRIEFING

7

#### ii.A. IMPROVING THE DISSEMINATION OF FFER RELATED INFORMATION

##### CURRENT CONCERNS:

- Stakeholder's opinions are solicited late in the decisionmaking process
- Extent, timing, and scope of available information differs between sites/agencies
- Stakeholders feel that some agencies perceive citizen requests for information as burdensome

FFER COMMITTEE BRIEFING

8

RECOMMENDATION A1:**FEDERAL AGENCIES SHOULD DEVELOP INFORMATION DISSEMINATION POLICIES**

- ◆ *Make most documents available to the public at the same time as to the state, tribal, and/or federal regulator*
- ◆ *Establish time frames for the release of each category of data*
- ◆ *Provide information to stakeholders that federal agencies use to make decisions including declassifying and reclassifying materials to the extent possible*
- ◆ *Inform personnel of agency policy on information dissemination*

FFER COMMITTEE BRIEFING

9

RECOMMENDATION A2:

**PUBLIC PARTICIPANTS SHOULD PORTRAY ACCURATELY THE STATUS OF DOCUMENTS OR OTHER INFORMATION THEY RECEIVE IN DRAFT FORM.**

FFER COMMITTEE BRIEFING

10

RECOMMENDATION A2:

**REGULATED AGENCIES SHOULD DESIGNATE "CENTRAL POINTS OF CONTACT" TO SERVE AS VISIBLE AND ACCESSIBLE ADVOCATES OF THE PUBLIC'S RIGHT-TO-KNOW**

*Role of "Central Points of Contact":*

- *Promptly resolve complaints that the agency is not responding to requests for information*
- *Identify deficiencies in the current information dissemination process and make suggestions for improvement*

FFER COMMITTEE BRIEFING

11

ADDITIONAL IDEAS FOR IMPROVING INFORMATION DISSEMINATION

- 1-800 telephone number
- Develop and maintain a mailing list
- Hold public meetings at formative stages
- Develop annual bulletins
- Make technical documents available on loan
- Have government employees contact individuals requesting information

FFER COMMITTEE BRIEFING

12

**II.B. IMPROVING THE PROCESS OF SOLICITING  
INPUT FROM AFFECTED STAKEHOLDERS**  
**CURRENT CONCERNS:**

- Perception that the public is consulted late in the process
- Current process is not interactive
- The large number of public involvement opportunities dissipates the public's ability and interest to participate

FFER COMMITTEE BRIEFING

13

**RECOMMENDATION B1:  
REGULATED AND REGULATING AGENCIES SHOULD  
ESTABLISH SITE-SPECIFIC ADVISORY BOARDS  
(SSABs)**

SSABs: Independent public bodies established to provide policy and technical advice to the regulated and regulating agencies with respect to key clean-up decisions

SSABs should be established when:

- An affected local, state, tribal, or federal government entity requests it; or
- At least 50 residents of the community or region sign a petition.

FFER COMMITTEE BRIEFING

14

**RECOMMENDATION B2:**

**SSABs SHOULD BUILD UPON CURRENT SITE  
EFFORTS AND AVOID DUPLICATION**

- Only one SSAB at a site or group of facilities
- Where advisory boards already exist, the SSAB model should build upon the already established effort

FFER COMMITTEE BRIEFING

15

**RECOMMENDATION B3:**

**SSABs SHOULD PROVIDE ADVICE TO THE  
REGULATING AND REGULATED AGENCIES ON A  
WIDE-VARIETY OF ISSUES, INCLUDING:**

- Identifying clean-up activities/projects
- Tracking progress on those activities/projects
- Providing information and perspectives on clean-up priorities
- Addressing important issues related to clean-up (land use, level of clean-up, acceptable risk, waste management, and technology issues)

FFER COMMITTEE BRIEFING

16

**RECOMMENDATION B4:**

**SENIOR REPRESENTATIVES OF BOTH REGULATED AND REGULATING AGENCIES SHOULD SERVE AS EX-OFFICIO MEMBERS OF SSABS**

- Role of regulated and regulating agency participants:
- Attend meetings and participate in discussions
- Do not take part in SSAB decisions regarding what advice to give to their own agencies
- Respond and explain agency responses to SSAB advice

FFER COMMITTEE MEETING

17

**RECOMMENDATION B5:**

**INDIVIDUALS INVITED TO SERVE ON SSABS SHOULD REPRESENT THE FULL DIVERSITY OF VIEWS WITHIN THE COMMUNITY**

The Committee recommends that SSABs should be composed primarily of people who are directly affected by site clean-up activities.

Other appropriate qualities of SSAB members:

- Ability to focus on environmental restoration issues
- Willingness to devote the time necessary to serve

FFER COMMITTEE MEETING

18

**Recommended SSAB membership selection process:**

- Regulating agencies shall solicit nominations
- Regulating agencies shall submit a list of SSAB members to the regulated agency
- The regulated agency shall accept the list unless it is not sufficiently diverse or balanced in viewpoints
- If regulated agency rejects the list, the regulating agencies shall propose an alternative list to the regulated agency
- If disagreement continues, refer matter to the higher levels of authority within the agencies
- All decisions must be explained openly and publicly

FFER COMMITTEE MEETING

19

**RECOMMENDATION B6:**

**MOST COMMITTEE MEMBERS RECOMMEND THAT THE REGULATED AGENCY SHOULD PROVIDE FINANCIAL SUPPORT TO SSABS**

FFER COMMITTEE MEETING

20

**RECOMMENDATION B6 (con 1):**

**REGULATED AGENCIES SHOULD PROVIDE ADMINISTRATIVE SUPPORT TO SSABS**

**Type of Items Covered:**

- Meeting space
- Document duplication
- Mailing expenses
- Per diem and travel expenses of local SSAB members
- Facilitator or coordinator

**Type of Items Not Covered:**

- SSAB member salaries or honorariums
- Legal actions

FFER COMMITTEE BRIEFING

21

**RECOMMENDATION B6 (con 1):**

**REGULATED AGENCIES SHOULD PROVIDE TECHNICAL ASSISTANCE FUNDING TO SSABS**

**Type of Items Covered:**

- Travel, per diem, and compensation for technical experts
- Local training courses to educate SSAB members on the regulatory process

**Type of Items Not Covered:**

- Additional sampling
- Legal actions

FFER COMMITTEE BRIEFING

22

**RECOMMENDATION B6 (con 1):**

**AMOUNT OF SSAB FUNDING SHOULD BE BASED ON SITE MAGNITUDE AND COMPLEXITY:**

**In general:**

- Funding amount should be proportionate to the level of planned activities in a year
- Funding amount should be awarded based on criteria developed by the regulated agencies in consultation with stakeholders
- Typical funding should be approximately \$50,000 a year and will not normally exceed \$250,000
- Funding should not be duplicative of TAG grants

FFER COMMITTEE BRIEFING

23

**II.C. IMPROVING CONSULTATION ON FFER FUNDING DECISIONS**

**Objective:** To establish a credible process for planning and undertaking FFER activities and dealing with funding shortfalls in an equitable and cost-effective manner.

FFER COMMITTEE BRIEFING

**RECOMMENDATION C1:**

**REGULATED AGENCIES SHOULD CONSULT WITH  
STAKEHOLDERS TO DISCUSS DECISIONS AFFECTING  
THE ABILITY OF A SITE TO MEET ITS LEGALLY  
BINDING CLEAN-UP OBLIGATIONS**

FFER COMMITTEE BRIEFING

25

**RECOMMENDATION C1 (con't):**

**CONSULTATIONS SHOULD BE ONGOING AND OCCUR  
AT DISCRETE POINTS, INCLUDING:**

- During initial field-level development of site-level requirements
- After submission of the President's budget to Congress
- After Presidential Congressional appropriation and during agency allocation
- After budget-year execution

FFER COMMITTEE BRIEFING

26

**N.D. IMPROVING MECHANISMS FOR SETTING  
PRIORITIES IN THE EVENT OF FUNDING  
SHORTFALLS**

**Objective:** To establish an FFER priority-setting system that balances the interests, responsibilities, and authorities of FFER program managers, state and federal regulators, tribes, and other affected stakeholders.

**Such an approach should instill Congressional and public confidence in the management of FFER programs and, thereby, help ensure support for these programs.**

FFER COMMITTEE BRIEFING

27

**RECOMMENDATION D1:**

**FFER PRIORITY-SETTING SYSTEMS SHOULD BE  
ESTABLISHED IN THE EVENT OF FUNDING  
SHORTFALLS CAUSED BY:**

- Insufficient appropriations (i.e., Congress does not appropriate the amount of FFER funds requested by the regulated agency)
- Unanticipated program growth (i.e., additional expenses caused by unanticipated events, new circumstances, or new data)

FFER COMMITTEE BRIEFING

29



**RECOMMENDATION D2:**

**ANY PRIORITY-SETTING PROCESS SHOULD ALLOW FOR FLEXIBILITY TO ACCOUNT FOR THE FOLLOWING FACTORS:**

- Protection of human health
- Risk reduction
- Cultural and socioeconomic factors
- Protection of natural resources
- Degree to which pest/other management practices affect the ability to meet established milestones
- Availability of technology necessary to meet established milestones

FFER COMMITTEE BRIEFING

29

**RECOMMENDATION D3:**

**RECOMMENDED PROCESS IN THE CASE OF SHORTFALLS CAUSED BY INSUFFICIENT APPROPRIATIONS AT SITES THAT ARE NOT SUBJECT TO OUTSIDE SUPERVISION**

(i.e., where the federal agency does not have any legally binding obligations)

- Regulated agency pools together all sites that are not subject to outside supervision and determines how to allocate the short fall among those sites based on the identified factors
- Federal agency representatives consult with affected stakeholders to determine how to allocate shortfalls within particular sites

FFER COMMITTEE BRIEFING

30

**RECOMMENDATION D4:**

**IN THE CASE OF SHORTFALLS CAUSED BY INSUFFICIENT APPROPRIATIONS AT SITES THAT ARE SUBJECT TO OUTSIDE SUPERVISION:**

- All sites with outside supervision share equally in the total amount of shortfall ("Fair Share Allocation") with opportunity for flexibility as needed, again based on identified factors
- Reallocation of funds within a site based on consultation among stakeholders
- If the Executive Branch requests sufficient clean-up funds from Congress and a good faith effort is made by the regulated agency to implement the FFER Committee recommendations, regulators should renegotiate milestones, rather than undertake punitive enforcement actions

FFER COMMITTEE BRIEFING

31

**RECOMMENDATION D5:**

**RECOMMENDED PROCESS IN THE EVENT OF FUNDING SHORTFALLS CAUSED BY UNANTICIPATED PROGRAM GROWTH**

- No enforcement protection
- Inform stakeholders as soon as shortfalls are known
- To the extent possible, absorb shortfall at the site where it occurs based on a consultative process with stakeholders.

FFER COMMITTEE BRIEFING

32

COLONEL GARY THOMAS  
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FOR ENVIRONMENTAL SECURITY (DUSD-ES)  
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#### Traditional Approaches to Community Involvement

- Provide information on program activities
  - establish an Administrative Board
  - establish central repositories with convenient public access
  - ensure availability of draft documents
  - hold public meetings
- Provide opportunities for public comment and respond to comments
- Establish Technical Review Committees (TRC)

#### Benefits of Community Participation

- | Institution and EPA                       |   | Community  |
|---|---|--|
| Increased credibility                     | ↔ | Increased understanding of cleanup means and progress                    |
| Improved community acceptance and support | ↔ | Greater opportunities to participate in the process and impact decisions |
| More responsive cleanups                  | ↔ | More responsive cleanups   |

#### Enhanced Approaches to Community Involvement

- Identify affected stakeholders and recognize their role in the cleanup process
- Open communication channels with representatives of the community
- Encourage local community involvement throughout the cleanup process
- Demonstrate that community input is valuable and impacts decision making
- Make draft reports available simultaneously to the community and regulatory agencies
- Establish RAGs at installations where there is sufficient, sustained interest

#### Members of the RAB

- Representatives of affected community interests and/or groups
- Interested individuals
- Installation
- EPA region (primarily MRL and BRAC installations)
- State environmental agency
- Other federal agencies (ATSDR, DOE, DOI, etc)
- Local government

| Policy

#### Purpose of the RAB

- Act as a forum for the discussion and exchange of information between the Institution regulatory agencies, and the community
- Provide an opportunity for stakeholders to participate in the cleanup process and provide input to decision makers
- Complement other community involvement initiatives

Policy

#### Responsibilities of the RAB

- Provide advice to the Institution and federal and state regulatory agencies
- Address important issues related to cleanup, such as land use, cleanup levels, acceptable risk, and waste management and technology development concerns related to environmental restoration
- Review and evaluate documents
- Identify proposed project requirements
- Recommend priorities among sites or projects
- Conduct regular meetings, open to the public, at convenient times and locations

Policy

#### Tasks of the RAB

- Develop, maintain, and use a mailing list of stakeholders who wish to receive cleanup information
- Arrange meetings to address:
- Develop an operating plan and working agenda
- Keep meeting minutes and make them available to the community

#### Determining the Need for a RAB

- Identify sufficient, sustained community interest in the cleanup program
- Use community involvement techniques to identify and solicit interest in a RAB
- If the community does not express interest in a RAB, document efforts taken to solicit interest and follow up with procedures to monitor community interest on an ongoing basis

#### Minimum Steps to Identify and Satisfy Community Interest

- Update the Community Statement Plan to include efforts to identify key community representatives, local residents, and environmental equity issues.
- conduct correspondence files
- conduct media coverage
- conduct interviews with local community members
- establish local emergency

Policy

#### Mandatory Formation of a RAB

- When installation closure involves transfer of property to the community
- When SO citizens petition for an advisory board
- When federal, state, or local government requests formation of an advisory board
- When the installation determines the need for an advisory board

#### Size of a RAB

- The number of RAB members should be large enough to reflect community diversity, yet small enough to be workable
- Recommended approximately 20 members

Policy

#### Selecting Installation Members

- Installation Commanding Officer (CO) selects one representative of sufficient grade/rank to implement RAB responsibilities as the RAB co chair
- CO may select a special installation member
- Other installation representatives, such as the Public Affairs Officer and the Judge Advocate, may provide support

Policy

#### Selecting Government Members

- Each organization selects one representative who has sufficient authority to implement the RAB mandate and who can dedicate the time necessary to fulfill responsibilities
- EPA region—usually the Remedial Program Manager
- State—the lead agency as established by Defense and State Memoranda of Agreement shall identify the appropriate representative
- Local Government—the local government shall identify the appropriate representative

Policy

#### Responsibilities of the Installation Co-Chair

- Coordinates with the Community Co chair to prepare and distribute an agenda prior to each RAB meeting
- Ensures that installation participants in an open and constructive manner
- Ensures that stakeholders have the opportunity to provide input into the decision process
- Ensures that community issues and concerns related to cleanup are brought to the table
- Provides draft documents in a timely manner to the RAB for review
- Ensures that documents distributed to the RAB are made available to the public (information repositories)
- Refers non-cleanup issues to appropriate installation officials for processing

Policy

#### Responsibilities of the Community Co-Chair

- Coordinates with the Installation Co chair to prepare and distribute an agenda prior to each RAB meeting
- Ensures that community members participate in an open and constructive manner
- Ensures that community issues and concerns related to cleanup are brought to the table
- Assists in disseminating information to the public

Policy

#### Responsibilities of the EPA Member

- Attend RAB meetings
- Provide support, where necessary, to facilitate the operation of the RAB
- Ensure that federal environmental standards and regulatory issues are identified and addressed
- Facilitate resolution of environmental issues and constraints
- Serve as an information, referral, and resource bank regarding installation cleanup
- Support the training of RAB members

Policy

### Responsibilities of the State Member

- Attend RAB meetings
- Provide support, where necessary, to facilitate the operation of the RAB
- Ensure that state environmental standards and regulatory issues are identified and addressed
- Facilitate resolution of environmental issues and constraints
- Serve as an information, referral, and resource bank regarding installation cleanup
- Support the training of RAB members

Policy

### Responsibilities of the RAB Community Members

- Attend RAB meetings
- Advise and comment on cleanup issues to government decision makers
- Report back to the organization or community they represent
- Serve as a conduit for information flow to and from the community
- Serve in a voluntary capacity

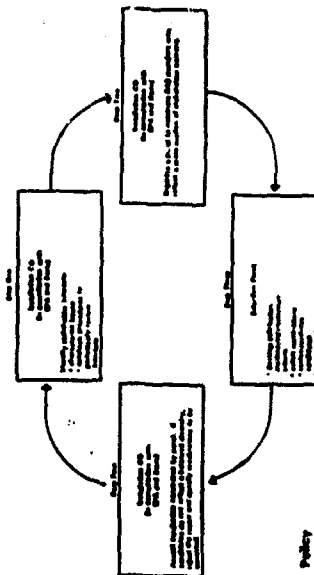
Policy

### Selecting Community Members

- CD will ensure that RAB membership reflects the diverse interests within the community:
- Selection process must be unbiased and open
  - Selection process must be conducted in cooperation with regulatory agencies and affected community members

Policy

### Selection Process for the Community Members of the RAB



Policy

### Developing RAB Operating Procedures

- Establish membership policies
  - length of service
  - salaries, replacements, and limitations
- Outline RAB operating principles
  - frequency of meetings
  - process for public review and comment
  - announcement of meetings
  - procedures for public participation and response to their questions and comments at RAB meetings

### Installation Support to RABs

- Installation will provide administrative support to RABs, including:
  - information transfer (meeting announcements and mailings)
  - meeting facilities
  - meeting materials
  - copying services
- Installation will provide technical support through the diverse expertise of its RAB team
- DoD has not committed to providing funds directly to RABs for administrative or technical support

Policy

### Converting a TRC to a RAB

- RABs are intended to meet the requirements of 10 USC 2705(c) for a TRC
- Where TRCs exist, the installation may expand them to create RABs by:
  - adding community co-chair
  - adding additional community representatives
  - making meetings open to the public
  - publishing meeting minutes

Policy

### Impact on Existing RABs

- The CO, in consultation with EPA and State, should review the structure and operation of existing RABs in light of new guidance:
- For those RABs deemed to be operating within the spirit of the guidance, do not change
  - For those RABs that do not represent diverse community interests or where the community is dissatisfied with the process, evaluate and implement appropriate changes

**RESTORATION ADVISORY  
BOARDS AT BRAC  
INSTALLATIONS**

**RABS FORMED    31 DEC 93    31 MAR 94**

**6                    22**



## DEFINITION OF STAKEHOLDER

ANY PERSON, GROUP, OR ORGANIZATION WHO IS AFFECTED BY THE ENVIRONMENTAL ISSUE OR THE PROCESS USED FOR RESOLUTION.

## STAKEHOLDERS

- EMPLOYEES AND PERSONNEL WHO LIVE ON BASE
- NEIGHBORS
- COMMUNITY LEADERS
- SPECIAL INTEREST GROUPS
  - ENVIRONMENTAL GROUPS
  - RELIGIOUS GROUPS
  - ECONOMIC DEVELOPMENT GROUPS
  - CIVIL RIGHTS GROUPS
  - MINORITY GROUPS
  - ANTI-POVERTY GROUPS

## COMMUNITY CONCERNS

- HEALTH AND SAFETY
- ECONOMICS
- AESTHETICS
- NUISANCE
- ENVIRONMENT
- PROCESS
- LEGAL ISSUES

## NAVY POLICY

- ESTABLISH RABS AT ALL INSTALLATIONS IN THE INSTALLATION RESTORATION PROGRAM
- EXPAND EXISTING TRCS TO INCLUDE ADDITIONAL COMMUNITY REPRESENTATIVES
- ESTABLISH NAVY AND COMMUNITY CO-CHAIRS FOR ALL RABS
- OPEN MEETING TO THE PUBLIC
- KEEP RABS FOCUSED ON ENVIRONMENTAL RESTORATION/CLEANUP

PA1/MCIA FERREREE  
OFFICE OF THE CHIEF OF NAVAL OPERATIONS (CNO)  
M453C  
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## Navy calls on Thousand Friends to discuss environmental issues

WASHINGTON -- A meeting set for Tuesday between the Navy and Thousand Friends' thousands of friends will discuss on-base environmental issues in "unprecedented setting," according to DOD environmental director Susan Wang.

The meeting has never caught community recommendations before, said Wang, a civilian volunteer and neighborhood board member. "As far as I know, this is the first time the higher ranks have come to the officials and said, 'Let's talk.' I used only around things were open to all kinds of discussion."

Wang praised the military for sitting down with community organizations. "There is where the meeting -- not that they're good guys -- are about of the battle," she said. "You don't see the Department of Defense or any governmental agency calling you up and saying, 'Hey, let's talk about your concerns.'"

## Navy snubs S.F. businesses in toxic clean-up of shipyard

The Navy's actions appear to contradict the wishes of President Clinton, who last July told the military must consult local communities on base conversions and make local job creation a top priority.

Sam Herring, a founder of the New England Council, a neighborhood political club, accused the Navy of purposefully keeping local businesses out of the clean up process in order to keep the community ignorant about the extent of contamination. "It's the same old game that's always played," Herring said. "It's economic and environmental racism when you need to be in San Francisco."

Sue Blum, director of the Green Central Research Center, which has monitored the shipyard's transition from military to civilian use since the Navy shut it down in 1974, said activists may return to controversial tactics as a result of the Navy's restrictions. "Let me put it this way," Blum said when pressed for specifics. "If the Navy doesn't see fit to put San Franciscans to work, we don't see why the Navy should be allowed to get any work done at all."

San Francisco Weekly, 2 March 1994

## RABS ENCOURAGE PUBLIC DIALOGUE

- TWO DIRECTIONAL COMMUNICATION
- INCREASED PUBLIC PARTICIPATION
- EXPRESSION OF DIVERSE VIEWPOINTS
- MEETS INDIVIDUAL NEEDS
- ONE ON ONE/SMALL GROUP DISCUSSIONS
  - STAKEHOLDERS REPORT TO CONSTITUENCY
  - AVAILABILITY SESSIONS
  - POSTERS AND EXHIBITS

## RAB MISSION

ESTABLISH AND MAINTAIN A FORUM WITH ALL STAKEHOLDERS FOR FULL, OPEN AND INTERACTIVE DIALOGUE AND EXCHANGE OF INFORMATION CONCERNING THE INSTALLATION'S CLEANUP PROGRAM.

**APPENDIX A**  
**WORKSHOP PARTICIPANTS**

## APPENDIX A

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**APPENDIX B**  
**SUMMARY OF RESPONSES TO WORKSHOP**  
**QUESTIONNAIRE**

**APPENDIX B**  
**SUMMARY OF RESPONSES TO WORKSHOP**  
**QUESTIONNAIRE**

**1. WHAT SUBJECTS COVERED IN THE WORKSHOP WERE OF MOST INTEREST TO YOU?**

A number of respondents indicated that all of the topics were of interest to them. Several specifically indicated an interest in the DoD environmental policy presentations made by representatives of the Office of the Deputy Under Secretary of Defense (Environmental Security) and the Office of the Director, Test and Evaluation. The environmental program overviews by the military services, and the presentations on geographic information systems and public involvement were also mentioned. One respondent stated: "I now realize how important it is to conserve our environment and how it is a must for MRTFB for the continuation of testing."

**2. WHAT TOPICS WERE OMITTED THAT SHOULD HAVE BEEN INCLUDED?**

The following topics were given in response to this question:

- How to communicate with interest groups at sites,
- The impact of BRAC on environmental spending,
- Additional public involvement issues, and
- User points of view on the range environmental process.

**3. WERE THE WORKSHOP SESSIONS USEFUL? BRIEFLY DESCRIBE WHY OR WHY NOT.**

The majority of respondents felt that the workshop sessions were very useful. Several mentioned the usefulness of hearing what others are doing in the environmental area.

One respondent did not feel that the workshop sessions were particularly useful. That person stated a desire for "how to" information sessions. Another respondent felt that some of the presentations were too "basic."

**4. WAS THE TIME ALLOCATED FOR THE SESSIONS TOO SHORT, ABOUT RIGHT OR TOO LONG?**

Most respondents felt the time allotted was adequate. However, some stated that the presentations should be held to the allotted time. One respondent felt that the working day was too long. They suggested a six-hour day, with four one and one-half hour sessions.

**5. DO YOU FEEL A CONFERENCE OF THIS TYPE SHOULD BE REPEATED? IF YES, HOW OFTEN?**

All of the respondents felt that the workshop should be held on an annual basis. One respondent suggested that specific areas be addressed more often with smaller, action-oriented groups.

**6. WHAT RECOMMENDATIONS DO YOU HAVE TO IMPROVE THE WORKSHOP?**

The following recommendations were made for improving the workshop:

- All of the ranges should participate,
- Eliminate duplicate topics,
- Provide speakers with time system to stay on schedule,
- Extend it to four days, ending at 1500 hours each day , and
- Include sessions that provide information on how to do certain aspects of environmental work.

**7. WHAT DO YOU SEE AS APPROPRIATE FOLLOW-UP ACTIONS ARISING FROM THIS WORKSHOP ON YOUR PART? ON THE PART OF OSD**

The responses included the following:

- OSD should provide greater coordination on test and evaluation environmental issues.
- OSD should provide sufficient resources for facilities outside the United States to meet environmental objectives.
- Facility personnel should work to improve NEPA compliance and range management plans, as well as continue to implement GIS.
- Respondents should provide input to appropriate organizations for including test and evaluation issues in life-cycle environmental assessments.

**8. ARE YOU FROM AN MRTFB, ANOTHER T&E FACILITY, A MAJOR COMMAND HEADQUARTERS, A DEPARTMENT HEADQUARTERS, OR OTHER (SPECIFY)?**

Six responses were received. Four of the respondents were from an MRTFB activity, one from another test and evaluation facility, and one from an operational test and evaluation command.

**9. WHAT IS YOUR AREA OF SPECIALTY: TEST AND EVALUATION, ENVIRONMENTAL, PUBLIC INVOLVEMENT, RESEARCH AND DEVELOPMENT, OR OTHER (SPECIFY)?**

- Test and evaluation 1
- Environmental 2
- Public involvement 1
- Research and development 1
- Other (facility specialist) 1

## **ABBREVIATIONS**

## ABBREVIATIONS

AFB	Air Force Base
AFFTC	Air Force Flight Test Center
ANEC	American Nuclear Energy Council
BMDO	Ballistic Missile Defense Organization
BRAC	Base Closure and Realignment Commission
CAA	Clean Air Act
CADD	computer-aided design drawing
CATEX	Categorical Exclusion List
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental, Restoration, Compensation and Liability Act
CERL	Construction Engineering Research Laboratory
CFC	chlorofluorocarbon
CTEIP	Central Test and Evaluation Investment Program
CWA	Clean Water Act
DASA(E,S&OH)	Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health)
DASAF(E,S&OH)	Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health)
DASN(E&S)	Deputy Assistant Secretary of the Navy (Environment and Safety)
DAU	Defense Acquisition University
DAWIA	Defense Acquisition Workforce Improvement Act
DDT&E(L&MP)	Deputy Director, Test and Evaluation
DDT&E(TFR)	Deputy Director, Test and Evaluation (Land and Maritime Programs)
DDT&E(TT&EP)	Deputy Director, Test and Evaluation (Test Facilities and Resources)
DECIM	Defense Environmental Corporate Information Management
DEM/VAL	demonstration/validation
DoD	Department of Defense
DoE	Department of Energy
DOIT	Development of On-Site Innovative Technology
DUSD(ES)	Deputy Under Secretary of Defense for Environmental Security
EEL	Edison Electric Institute

EMD	engineering and manufacturing development
EPA	Environmental Protection Agency
EPCRA/TRI	Emergency Planning and Community Right to Know Act/Toxic Release Inventory
ES	environmental security
FY	fiscal year
GIS	geographic information system
HMC&M	hazardous materials control and management
IDA	Institute for Defense Analyses
ITRO	Interservice Training Review Organization
MECC	MRTFB Environmental Coordinating Committee
MILCON	military construction
MRTFB	Major Range and Test Facility Base
NAWC	Naval Air Warfare Center
NAWC-AD	Naval Air Warfare Center, Aircraft Division
NAWC-WD	Naval Air Warfare Center, Weapons Division
FTEG	Flight Test Engineering Group
NEPA	National Environmental Policy Act
NRC	Nuclear Regulatory Commission
NUMARC	Nuclear Management and Resource Council
NWAC	?, TOC
O&M	Operations and Maintenance
ODDT&E(TFR)	Office of the Deputy Director of Defense for Test and Evaluation (Test Facilities and Resources)
ODS	ozone-depleting substance
ODUSD(ES)	Office of the Deputy Under Secretary of Defense for Environmental Security
ODUSD(ES)/CI	Office of the Deputy Under Secretary of Defense for Environmental Security/Compliance
ODUSD(ES)/CM	Office of the Deputy Under Secretary of Defense for Environmental Security/Conservation
OPEVAL	operational evaluation
OSD	Office of the Secretary of Defense
P2	pollution prevention
PCB	polychlorinated biphenyl
PIP	Priority Investment Program
PM	program manager
R&D	research and development

<b>RAMS</b>	<b>Resources Automated Management System</b>
<b>RCRA</b>	<b>Resource Conservation and Recovery Act</b>
<b>RDT&amp;E</b>	<b>research, development, test and evaluation</b>
<b>SECDEF</b>	<b>Secretary of Defense</b>
<b>SERDP</b>	<b>Strategic Environmental Research and Development Program</b>
<b>T&amp;E</b>	<b>test and evaluation</b>
<b>TDP</b>	<b>Technology Development Plan</b>
<b>TECHEVAL</b>	<b>technical evaluation</b>
<b>TECOM</b>	<b>Test and Evaluation Command</b>
<b>USA</b>	<b>United States Army</b>
<b>USAF</b>	<b>United States Air Force</b>
<b>USCEA</b>	<b>United States Council for Energy Resources</b>
<b>USFWS</b>	<b>United States Fish and Wildlife Service</b>
<b>UST</b>	<b>underground storage tank</b>
<b>YPG</b>	<b>Yuma Proving Ground</b>



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